Instructions for Continued Airworthiness for the Garmin G500H Installation in Eurocopter AS350

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CHAPTER 1

Section 01-00-00 Introduction

These are accepted Instructions for Continued Airworthiness for modifications performed in accordance with Eurocopter AS350 Garmin G500H Flight Display System Installation STC. All references to the G500H in this document will refer to the Garmin G500H Flight Display System Installation and other related components specified in these Instructions for Continued Airworthiness (ICA). A STC permission letter and Instructions for Continued Airworthiness (ICA) should be supplied to the owner/operator of the STC at the time of completion. Subsequent accepted changes to the ICA will be distributed to owners and operators of the STC.

This, Instructions for Continued Airworthiness, is intended to supplement the Model AS350 rotorcraft maintenance manuals provided by Eurocopter. The information, procedures, requirements, and limitations contained in this, Instructions for Continued Airworthiness, for this type design change supersedes the information, procedures, requirements, and limitations contained in the rotorcraft's maintenance manual when the type design change is installed on the Type Certificate Holder's rotorcraft.

CHAPTER 4

Section 04-00-00 Airworthiness Limitations

There are no additional Airworthiness Limitations as defined in 14 CFR Part 27, Appendix A. A27.4 that result from this modification. The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

CHAPTER 5

Section 05-00-00 Continued Airworthiness Inspections

1. General

This chapter contains time limit intervals for the Component Overhaul Schedule and Scheduled Inspections for the G500H Installation. This chapter is to be added to the approved scheduled inspection for the rotorcraft.

2. Component Overhaul Schedule

The system does not require overhaul at a specific time period. Power on self-test and continuous BIT will monitor the health of the G500H system. If any LRU indicates an internal failure, the unit may be removed and replaced.

3. Scheduled Inspections Overview

The G500H Installation requires a 90 Day Inspection that must be performed 90 days after installation and then afterwards within 90 days of the last G500H Installation 90 day inspection. The 90 Day Inspection requirements are specified in Table 5-01.

The G500H Installation requires an Annual Inspection that must be performed within 1 year (12 months) of initial installation and then afterwards within 1 year (12 months) of the last G500H Installation annual inspection. The annual inspection requirements are specified in Table 5-02.

The G500H Installation requires a 5 Year Inspection that must be performed within 60 months of initial installation and then afterwards within 60 months of the last G500H Installation inspection. The 5 Year Inspection requirements are specified in Table 5-03.

The G500H Installation requires a 10 Year/2000 Flight Hours Inspection that must be performed within 120 months or 2000 flight hours, whichever occurs first, of initial installation and then afterwards within 120 months or 2000 flight hours, whichever occurs first, of the last G500H Installation 10 year/2000 flight inspections. The 10 Year/2000 Flight Hour Inspection requirements are specified in Table 5-04.

4. Special Inspection Practices

Conditions may arise from incidents or accidents that may warrant additional inspection requirements. A Special Inspection is required if the aircraft is involved in a hard landing or is subjected to total immersion in water. If either of these conditions occurs, the G500H Installation must be inspected using the same procedures called out in the Annual Inspection Procedures in Table 5-02.

The G500H Installation has a Post-Lightning Strike Inspection that must be performed in the event of a suspected or actual lightning strike to the aircraft. The Post-Lightning Strike Inspection requirements are specified in Table 5-05.

5. Definitions and Acronyms

- The following is short descriptions of words and terms used in the procedures for the required scheduled inspections.

- **Examine** – Look carefully to find the condition of the component. Find how that condition is related to a specific standard.

- **Condition** – The state of an item or component compared to a known standard.

- **Standard** – A specified rule or measure that is used to find the condition of a component.

- **Damage** – Physical deterioration of a component.

- **Inspection** – A procedure that includes checking, inspecting, and examining a system or component.

- **Scheduled Inspection** – An inspection procedure that must occur at a specified calendar interval or at specified operational time intervals. Scheduled Inspections are required to help ensure the rotorcraft stays airworthy.

- **Maintenance** – The servicing and / or repair of a rotorcraft, a system, or a component that keeps it serviceable.

- **Security** – Term used for inspection of hardware and components to make sure they are properly attached and tightened.

Acronyms

FOV-	Field of View
ICA-	Instructions for Continued Airworthiness
PFD-	Primary Flight Display
MFD-	Multifunction Display
VOM-	Volt Ohm Meter
GDC-	Garmin Data Computer
GRS-	Garmin Reference System
GMU-	Garmin Magnetometer Unit
GDU-	Garmin Display Unit

OAT- Outside Air Temperature

GTP- Garmin Temperature Probe

ADC- Air Data Computer

STC- Supplemental Type Certificate

AHRS- Attitude Heading Reference System

Section 05-20-10 Continued Airworthiness Scheduled Inspections

1. General

This section contains requirements for scheduled inspections. Also included is a list of special tools required to perform the scheduled inspections. If any part of the installation appears to be functioning improperly, consult the troubleshooting guide. If a major component is damaged or continues to malfunction, the component in question should be returned to the manufacturer for replacement.

2. Scheduled Inspection Program

The G500H Installation requires scheduled inspections in order to maintain continued airworthiness. Every effort should be made to perform the inspections with the aircraft placed in a clean well lit environment. There are four different scheduled inspections required for the G500H Installation.

a) **90 Day Inspection**

The 90 day inspection is required to be performed every 90 day period of calendar elapsed time, regardless of hours of operation. Inspection Table 5-01 specifies the requirements of the 90 day inspection.

b) **1 Year (Annual) Inspection**

The 1 year (annual) inspection is required to be performed every 1 year period of calendar elapsed time, regardless of hours of operation. Inspection Table 5-02 specifies the requirements of the 1 year (annual) inspection.

c) **5 Year Inspection**

The 5 year inspection is required to be performed every 5 year period of calendar elapsed time, regardless of hours of operation. Inspection Table 5-03 specifies the requirements of the 5 year inspection

d) **10 Year / 2000 Flight Hours**

The 10 year /2000 Flight Hour inspection is required to be performed at a 10 year period of calendar elapsed time, or at 2000 flight hours of operation, whichever occurs first. Inspection Table 5-04 specifies the requirements of the 10 year/2000 flight hour inspection.

3. Tools and Special Tools for Scheduled Inspection

Although not necessarily considered special tools, the adjustable ball swivel mirror and bright flashlight and / or drop light are standard requirements for doing inspections. These items should be used freely and frequently to enhance inspection quality and help ensure

discrepancies are not missed. It is important to have adequate lighting for all phases of the inspection.

The special tools necessary for the G500H inspection are listed as follows:

a) Milliohm meter (for electrical bonding testing).

Table 5-01 -90 Day Inspection

Registration No.	Serial No.	Helicopter Total Hours
90 Day Scheduled Inspection • The 90 Day Inspection shall be accomplished at least at an interval of once every 90 days of elapsed calendar time. • Initial each item after accomplishing the inspection. • Record all findings and attach a copy of findings to this inspection form. • After correction of all findings, make maintenance record entry.		
90 Day Pre-inspection		
Requirement		**Initial**
1. Review Airworthiness Directives.		
90 Day Inspection		
Requirement		**Initial**
GDC 74H ADC		
1. Access GDC 74H (reference Section 6-00-00- Dimensions and Access). Drain the pitot-static system by removing the safety wire, nut and plug.		
2. Re-install the plug, nut and safety wire.		
3. Reference Section 12-10-00 Return-to-Service Practices for the GDC 74H		

Table 5-02 -1 year (Annual) Inspection

Registration No.	Serial No.	Helicopter Total Hours

1 Year (Annual) Scheduled Inspection

- The 1 Year inspection shall be accomplished at least at an interval of once every year of elapsed calendar time.
- Initial each item after accomplishing the inspection.
- Record all findings and attach a copy of findings to this inspection form.
- After correction of all findings, make maintenance record entry.

1 year (Annual) Pre-inspection

Requirement	**Initial**
1. Review Airworthiness Directives.	

1 year (Annual) Inspection

Requirement	**Initial**
GDU 620	
1. Locate GDU 620 (reference Section 6-00-00 Access and Dimension). Inspect all knobs and buttons for legibility.	
2. Inspect instrument panel for damage, corrosion, and security. If damaged, replace damaged or cracked Instrument panel. Treat and repair corrosion as required in Section 20-40-00 Corrosion Control Maintenance Practices. Tighten any loose hardware to values listed in Section 20-10-00.	
3. Inspect unit for security of attachment. Replace the damaged or corroded hardware. Replace any missing hardware. Torque all screws in accordance with Section 20-10-00 Torques Maintenance Practice.	
4. Conduct visual inspection of wires, backshells, and connectors looking for signs of wear, deterioration or damage. Replace as required.	
5. Inspect harness connections in back of unit. Secure any loose connections and support unsecure wiring harness with additional clamping and / or tie rap supports if required.	
GRS 77H AHRS	
1. Access GRS 77H (reference Section 6-00-00- Dimensions and Access). Inspect AHRS and mount for physical damage cracks, and corrosion. Treat and repair corrosion as required in Section 20-40-00 Corrosion Control Maintenance Practices.	

2. Conduct visual inspection of wires, backshells, and connectors looking for signs of wear, deterioration or damage. Replace as required.	
3. Inspect harness connections in back of unit. Secure any loose connections and support unsecure wiring harness with additional clamping and / or tie rap supports if required.	
4. Inspect unit for security of attachment. Replace the damaged or corroded hardware. Replace any missing hardware. Torque all screws in accordance with Section 20-10-00 Torques Maintenance Practice.	
GMU 44 Magnetometer Installation	
1. Access GMU 44 (reference Section 6-00-00- Dimensions and Access). Inspect GMU 44 and mount for physical damage cracks, and corrosion. Treat and repair corrosion as required in Section 20-40-00 Corrosion Control Maintenance Practices.	
2. Conduct visual inspection of wires, backshells, and connectors looking for signs of wear, deterioration or damage. Replace as required.	
3. Inspect hardware. Replace the damaged or corroded hardware. Replace any missing hardware. Torque all screws in accordance with Section 20-10-00 Torques Maintenance Practice.	
4. Inspect harness connections in back of unit. Secure any loose connections and support unsecure wiring harness with additional clamping and / or tie rap supports if required.	
Shelf Installation	
1. Access Shelf Installation (reference Section 6-00-00- Dimensions and Access). Inspect for physical damage cracks, and corrosion. Treat and repair corrosion as required in Section 20-40-00 Corrosion Control Maintenance Practices	
2. Inspect hardware. Replace the damaged or corroded hardware. Replace any missing hardware. Torque all screws in accordance with Section 20-10-00 Torques Maintenance Practice.	
GDC 74H ADC Installation	
1. Access GDC 74H (reference Section 6-00-00- Dimensions and Access). Inspect GDC 74H and mount for physical damage cracks, and corrosion. Treat and repair corrosion as required in Section 20-40-00 Corrosion Control Maintenance Practices.	
2. Inspect unit for security of attachment. Replace the damaged or corroded hardware. Replace any missing hardware. Torque all screws in accordance with Section 20-10-00 Torques Maintenance Practice.	
3. Conduct visual inspection of wires, backshells, and connectors looking for signs of wear, deterioration or damage. Replace as required.	
4. Inspect harness connections in back of unit. Secure any loose connections and support unsecure wiring harness with additional clamping and / or tie rap supports if required.	
5. Inspect Pitot-Static System for damage. Replace parts as needed. Complete the 90 Day Inspection found in Table 5-01.	

GTP 59 OAT Probe Installation	
1. Access GTP 59 OAT Probe (reference Section 6-00-00- Dimensions and Access). Inspect GTP 59 OAT and mount for physical damage cracks, and corrosion. Treat and repair corrosion as required in Section 20-40-00 Corrosion Control Maintenance Practices.	
2. Inspect harness connections in back of unit. Secure any loose connections and support unsecure wiring harness with additional clamping and / or tie rap supports if required.	
3. Inspect unit for security of attachment. Replace the damaged or corroded hardware. Replace any missing hardware. Torque all screws in accordance with Section 20-10-00 Torques Maintenance Practice.	
Terminal Block Installation	
1. Access Terminal Block Installation (reference Section 6-00-00- Dimensions and Access). Inspect installation for physical damage cracks, and corrosion. Treat and repair corrosion as required in Section 20-40-00 Corrosion Control Maintenance Practices.	
2. Inspect unit for security of attachment. Replace the damaged or corroded hardware. Replace any missing hardware. Torque all screws in accordance with Section 20-10-00 Torques Maintenance Practice.	

Table 5-03 -5 Year Inspection

Registration No.	Serial No.	Helicopter Total Hours

5 Year Scheduled Inspection

- The 5 Year Inspection shall be accomplished at least at an interval of once every 5 years of elapsed calendar time.
- Initial each item after accomplishing the inspection.
- Record all findings and attach a copy of findings to this inspection form.
- After correction of all findings, make maintenance record entry.

5 Year Pre-inspection	
Requirement	**Initial**
1. Review Airworthiness Directives.	
5 Year Inspection	
Requirement	**Initial**
GRS 77H AHRS	
1. The GRS 77 utilizes an Earth magnetic field model which is updated once every five years as part of the Aviation Database maintained by the owner/operator. If the magnetic model is not current, the unit will issue an alert upon startup indicating the model has expired. The model can be updated by inserting an aviation database card with an updated IGRF model and powering on the system. A prompt will direct the user to press ENT to update the model.	

Table 5-04 -10 Year/2000 Flight Hour Inspection

Registration No.	Serial No.	Helicopter Total Hours

10 Year/ 2000 Flight Hour Scheduled Inspection

- The 10 Year/ 2000 Flight Hour Inspection shall be accomplished at least at an interval of once every 10 years of elapsed calendar time or 2000 Flight Hours, whichever occurs first.
- Initial each item after accomplishing the inspection.
- Record all findings and attach a copy of findings to this inspection form.
- After correction of all findings, make maintenance record entry.

10 Year/2000 Flight Hour Pre-inspection	
Requirement	**Initial**
1. Review Airworthiness Directives.	

10 Year/2000 Flight Hour Inspection	
Requirement	**Initial**
GRS 77H AHRS	
1. Access GRS 77H, (Reference Section 6-00-00 Dimensions and Access) and disconnect all harness connectors.	
2. Measure the resistance between the GRS 77H and a nearby exposed portion of aircraft metallic structure. Verify that the resistance is less than or equal to 20 milliohms. If greater must be restored to the value specified in the G500H STC Installation Manual.	
3. Reconnect all disconnected harness connectors and ensure they are secure	
GDU 620	
4. Access GDU 620, (Reference Section 6-00-00 Dimensions and Access) and disconnect all harness connectors.	
5. Measure the resistance between the GDU 620 and a nearby exposed portion of aircraft metallic structure. Verify that the resistance is less than or equal to 40 milliohms. If greater must be restored to the value specified in the G500H STC Installation Manual.	
6. Reconnect all disconnected harness connectors and ensure they are secure	

GDC 74H ADC	
7. Access GDC 74H, (Reference Section 6-00-00 Dimensions and Access) and disconnect all harness connectors.	
8. Measure the resistance between the GDC 74H and a nearby exposed portion of aircraft metallic structure. Verify that the resistance is less than or equal to 20 milliohms. If greater must be restored to the value specified in the G500H STC Installation Manual.	
9. Reconnect all disconnected harness connectors and ensure they are secure	
GMU 44	
10. Access GMU 44, (Reference Section 6-00-00 Dimensions and Access) and disconnect all harness connectors.	
11. Measure the resistance between the GMU 44 and a nearby exposed portion of aircraft metallic structure. Verify that the resistance is less than or equal to 20 milliohms. If greater must be restored to the value specified in the G500H STC Installation Manual.	
12. Reconnect all disconnected harness connectors and ensure they are secure	
GTP 59	
13. Access GTP 59, (Reference Section 6-00-00 Dimensions and Access) and disconnect all harness connectors.	
14. Measure the resistance between the GTP 59 and a nearby exposed portion of aircraft metallic structure. Verify that the resistance is less than or equal to 5 milliohms. If greater must be restored to the value specified in the G500H STC Installation Manual.	
15. Reconnect all disconnected harness connectors and ensure they are secure	

4. Post Inspection Maintenance Practices

After completion of the 1 Year (Annual) Inspection, 5 Year Inspection and 10 Year/2000 Flight Hour Inspection and all discrepancies found have been corrected, the Return-to-Service Practices (Reference Section 12-00-00 Return-to-Service Practices) should be accomplished in preparation for returning the rotorcraft to service

Section 05-20-20 Continued Airworthiness Special Inspections

1. General

This section contains requirements for special inspections. Also included is a list of special tools required to perform the scheduled inspections. If any part of the installation appears to be functioning improperly, consult the troubleshooting guide. If a major component is damaged or continues to malfunction, the component in question should be returned to the manufacturer for replacement.

2. Special Inspection Program

Conditions may arise from incidents or accidents that may warrant additional inspection requirements. A Special Inspection is required if the aircraft is involved in a hard landing or is subjected to total immersion in water. If either of these conditions occurs, the G500H Installation must be inspected using the same procedures called out in the Annual Inspection Procedures in Table 5-02.

The G500H Installation has a Post-Lightning Strike Inspection that must be performed in the event of a suspected or actual lightning strike to the aircraft. The Post-Lightning Strike Inspection requirements are specified in Table 5-05.

3. Tools and Special Tools for Special Inspections

Although not necessarily considered special tools, the adjustable ball swivel mirror and bright flashlight and / or drop light are standard requirements for doing inspections. These items should be used freely and frequently to enhance inspection quality and help ensure discrepancies are not missed. It is important to have adequate lighting for all phases of the inspection.

The special tools necessary for the G500H inspection are listed as follows:

a) Milliohm meter (for electrical bonding testing).

Table 5-05 -Post-Lightning Strike Inspection

Registration No.	Serial No.	Helicopter Total Hours

Post-Lightning Strike Inspection

- The Post-Lightning Strike Inspection shall be accomplished in the event of a suspected or actual lightning strike to the aircraft.
- Initial each item after accomplishing the inspection.
- Record all findings and attach a copy of findings to this inspection form.
- After correction of all findings, make maintenance record entry.

Post-Lightning Strike Pre-inspection	
Requirement	**Initial**
1. Review Airworthiness Directives.	
Post-Lightning Strike Inspection	
Requirement	**Initial**
GTP 59 OAT Probe Installation	
1. Access the GTP 59 OAT Probe Installation. Reference Section 6-00-00 Dimensions and Access.	
2. Inspect the probe and the doubler (P/N: 115-01812-00) for signs of structural damage. If there are visible signs of damage, replace the parts as needed.	
Post-Lightning Strike Post- Inspection	
Requirement	**Initial**
1. Verify that the OAT is displayed on the GDU 620 PFD normally.	

CHAPTER 6

Section 06-00-00 Dimensions and Access

1. Access Methods

For removal and installation of specific components, reference Section 31-00-00 Instruments, Removal and Replacement

a) GMU 44, Magnetometer

Magnetometer is located in the tail boom between TB 868 and 1578. (Figure 6-01)

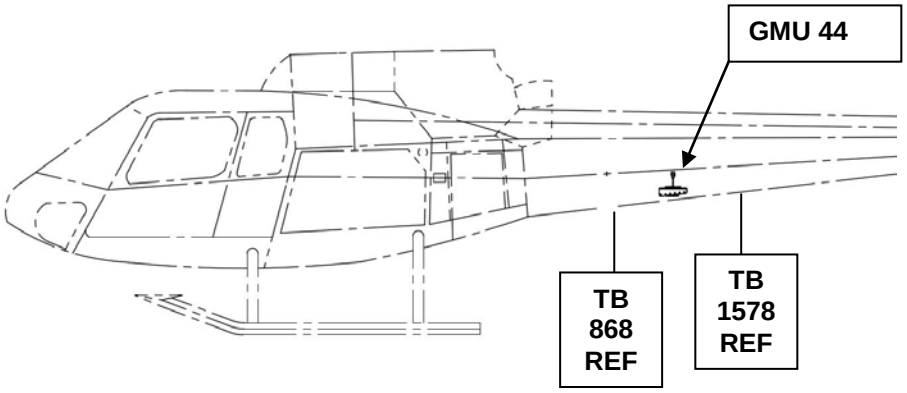

Figure 6-01

Access Removal and Installation Methods

i. Removal

1. Un-latch and open the baggage compartment door on the left side of the aircraft.
2. Remove the tail boom closeout panel by loosening the ¼ turn fasteners that hold it in place.
3. If an air conditioner is installed it may be necessary to remove the air conditioner unit to gain access to the magnetometer. Consult the manufacturers Installation and removal instructions for proper removal of unit.

ii. Installation

1. Re-install air conditioner if removed to gain access to the magnetometer. Consult the manufacturers Installation and Removal instructions for proper installation of unit.
2. Re-install tail boom closeout panel by tightening the ¼ turn fasteners that hold it in place.
3. Close the baggage compartment door and latch it.

Caution: Use of power tools during removal or installation of panels and attaching hardware may damage nut plates or deform holes in composite doors, covers, panels, and fairings.

b) GDC 74H, Air Data Computer

GDC 74H is located underneath the cabin floor between station 1790 and 2325 on the left or right side of the aircraft depending on aircraft configuration. (Figure 6-02)

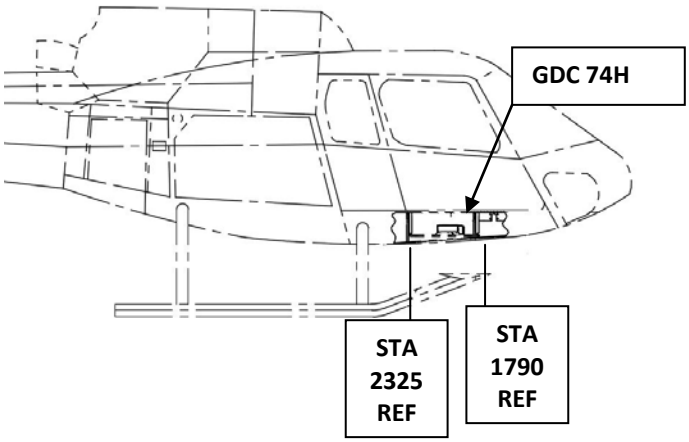

Figure 6-02

Access Removal and Installation Methods

i. Removal

1. Un-latch the Center lower belly access panel.
2. Disconnect the retaining straps that prevent the panel from falling to the floor.
3. If aftermarket items are attached to the Center lower belly panel it may be necessary to remove or disconnect them in order to remove the lower belly panel. Consult the manufacturers Installation and Removal instructions for proper removal of items.

ii. Installation

1. Re-install aftermarket items if removed to gain access to the air data computer. Consult the manufacturers Installation and Removal instructions for proper installation of items.
2. Connect the retaining strap that was disconnected to gain access to the air data computer.
3. Close the Center lower belly access panel and latch it.

Caution: Use of power tools during removal or installation of panels and attaching hardware may damage nut plates or deform holes in composite doors, covers, panels, and fairings.

c) GRS 77H, AHRS

GRS 77H is located underneath the cabin floor between station 1790 and 2325 on the left or right side of the aircraft depending on aircraft configuration. (Figure 6-03)

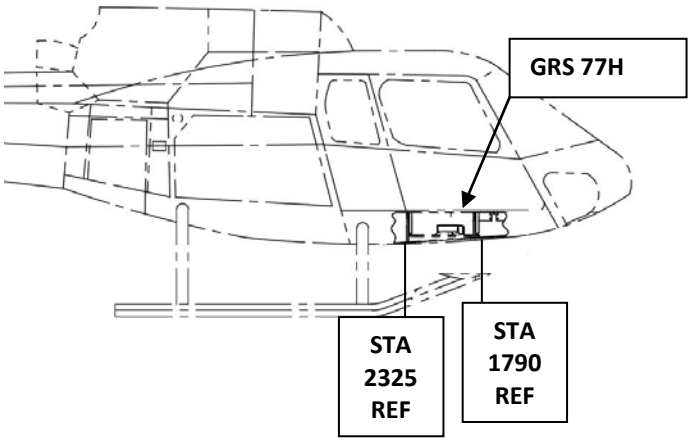

Figure 6-03

Access Removal and Installation Methods

i. Removal

1. Un-screw the Center lower belly access panel.
2. Disconnect the retaining straps that prevent the panel from falling to the floor.
3. If aftermarket items are attached to the Center lower belly panel it may be necessary to remove or disconnect them in order to remove the lower belly panel. Consult the manufacturers Installation and Removal instructions for proper removal of items.

ii. Installation

1. Re-install aftermarket items if removed to gain access to the air data computer. Consult the manufacturers Installation and Removal instructions for proper installation of items.
2. Connect the retaining strap that was disconnected to gain access to the air data computer.
3. Close the Center lower belly access panel and attach screws.

Caution: Use of power tools during removal or installation of panels and attaching hardware may damage nut plates or deform holes in composite doors, covers, panels, and fairings.

d) Shelf Installation

The shelf installation is located underneath the cabin floor between station 1790 and 2325 on the left or right side of the aircraft depending on aircraft configuration. (Figure 6-04)

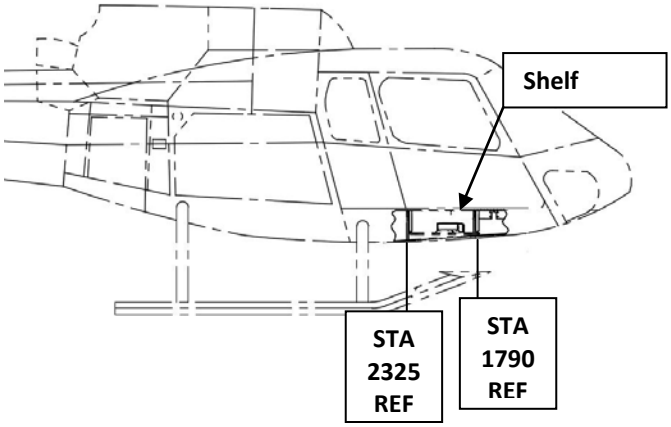

Figure 6-04

Access Removal and Installation Methods

i. Removal

1. Un-screw the Center lower belly access panel.
2. Disconnect the retaining straps that prevent the panel from falling to the floor.
3. If aftermarket items are attached to the Center lower belly panel it may be necessary to remove or disconnect them in order to remove the lower belly panel. Consult the manufacturers Installation and Removal instructions for proper removal of items.

ii. Installation

1. Re-install aftermarket items if removed to gain access to the air data computer. Consult the manufacturers Installation and Removal instructions for proper installation of items.
2. Connect the retaining strap that was disconnected to gain access to the air data computer.
3. Close the Center lower belly access panel and attach screws.

Caution: Use of power tools during removal or installation of panels and attaching hardware may damage nut plates or deform holes in composite doors, covers, panels, and fairings.

e) Terminal Block Installation

Terminal Block is located underneath the cabin floor between station 1120 and 1502 on the left side of the aircraft. (Figure 6-05)

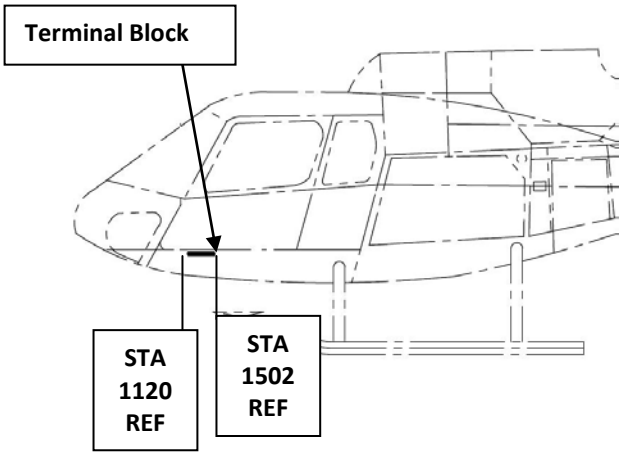

Figure 6-05

Access Removal and Installation Methods

i. Removal

1. Un-latch the Center lower belly access panel.
2. Disconnect the retaining straps that prevent the panel from falling to the floor.
3. If aftermarket items are attached to the Center lower belly panel it may be necessary to remove or disconnect them in order to remove the lower belly panel. Consult the manufacturers Installation and Removal instructions for proper removal of items.

ii. Installation

1. Re-install aftermarket items if removed to gain access to the air data computer. Consult the manufacturers Installation and Removal instructions for proper installation of items.
2. Connect the retaining strap that was disconnected to gain access to the air data computer.
3. Close the Center lower belly access panel and latch it.

Caution: Use of power tools during removal or installation of panels and attaching hardware may damage nut plates or deform holes in composite doors, covers, panels, and fairings.

f) GTP 59 OAT Probe Installation

The GTP 59 OAT Probe is located on the existing belly panel between station 2437 and 2351. (Figure 6-06)

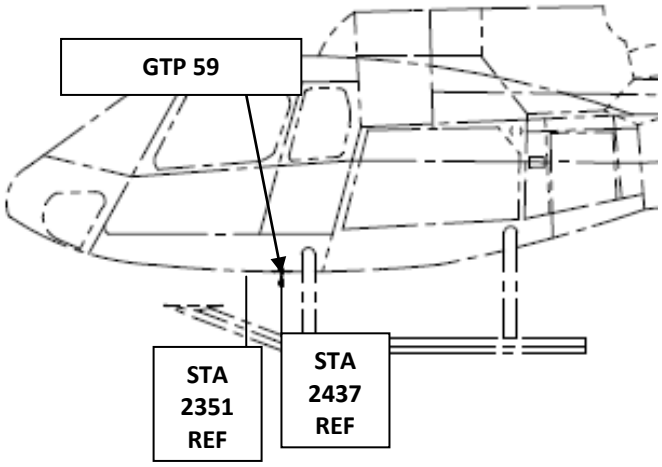

Figure 6-06

Access Removal and Installation Methods

i. Removal

1. Un-latch the Center lower belly access panel.
2. Disconnect the retaining straps that prevent the panel from falling to the floor.
3. If other aftermarket items are attached to the Center lower belly panel it may be necessary to remove or disconnect them in order to remove the lower belly panel. Consult the manufacturers Installation and Removal instructions for proper removal of items.

ii. Installation

1. Re-install any other aftermarket items if removed to gain access to the air data computer. Consult the manufacturers Installation and Removal instructions for proper installation of items.
2. Connect the retaining strap that was disconnected to gain access to the air data computer.
3. Close the Center lower belly access panel and latch it.

Caution: Use of power tools during removal or installation of panels and attaching hardware may damage nut plates or deform holes in composite doors, covers, panels, and fairings

g) GDU 620 Installation

The GDU 620 is located in the right hand side of the instrument panel (Reference Section 31-00-00 Instruments, Figures 31-08 through 31-11 for specific location based on installation configuration).

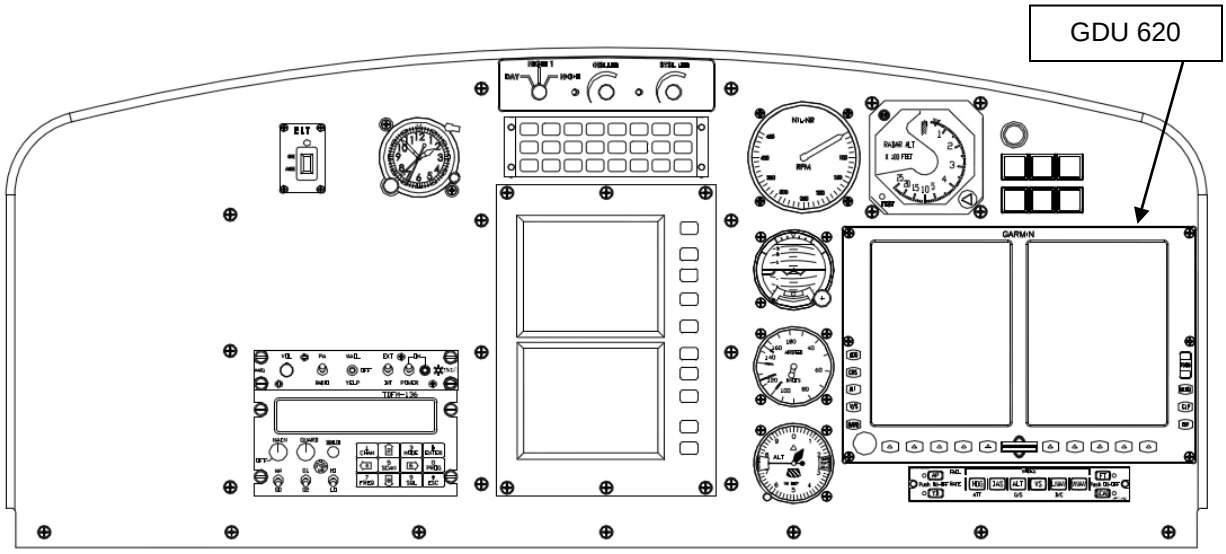

Figure 6-07

Access Removal and Installation Methods

i. Removal

1. Un-screw the screws on the front of the instrument panel.
2. For items that are attached to the instrument panel it may be necessary to remove or disconnect them in order to remove the instrument panel. Consult the manufacturers Installation and Removal instructions for proper removal of items.

ii. Installation

1. Re-install items if removed or disconnected to remove the instrument panel. Consult the manufacturers Installation and Removal instructions for proper installation of items.
2. Re-install screw on front of instrument panel.

Caution: Use of power tools during removal or installation of panels and attaching hardware may damage nut plates or deform holes in composite doors, covers, panels, and fairings.

CHAPTER 8

Section 8-00-00 Weight and Balance Information

Installation #	Description	Weight	CG Location
01E06310002-01	GMU 44 Magnetometer	0.70 lbs	TB 1215, WL -2225, BL 0.0
01E06310003-01	RH Shelf	2.20 lbs	STA 2042, WL -2781, BL 600.7
01E06310003-02	LH Shelf	2.20 lbs	STA 2042, WL -2781, BL -600.7
01E06310004-01	GDC 74H	1.92 lbs	STA 2003, WL -2745, BL 662.0
01E06310004-02	GDC 74H	1.92 lbs	STA 2003, WL -2745, BL -662.0
01E06310005-01	GRS 77H AHRS	3.46 lbs	STA 2019, WL -2748, BL 572.0
01E06310005-02	GRS 77H AHRS	3.46 lbs	STA 2019, WL -2748, BL -572.0
01E06310008-01	Terminal Block	0.47 lbs	STA 1265, WL -2659, BL -612.2
01E06310009-01	GTP 59 OAT Probe	0.08 lbs	STA 2386, WL -2910, BL 7.2
01E06310014-01	Instrument Panel	47.80 lbs	STA 1120, WL -2066, BL 0.0
01E06310014-02	Instrument Panel	47.80 lbs	STA 1120, WL -2066, BL 0.0
01E06310014-03	Instrument Panel	47.80 lbs	STA 1120, WL -2066, BL 0.0
01E06310014-04	Instrument Panel	47.80 lbs	STA 1120, WL -2066, BL 0.0

CHAPTER 12

Section 12-00-00 Servicing Maintenance Practices

This chapter includes Return-to-Service Practices and Calibration Practices to be used with the G500H Flight Display System Installation.

Section 12-10-00 Return-to-Service Practices

1. General

a) GMU 44 Magnetometer

1. Power up the G500H system with the GDU 620 in normal mode.
2. Verify that the GDU displays valid heading within approximately one minute. Note that heading can remain invalid if the magnetometer is near a large metal structure such as a hangar wall or if the magnetometer is close to a large ground power cart.
3. Verify that no unexpected alerts are present. If alerts are present, troubleshoot using Section 31-00-00 Troubleshooting.

b) GDC 74H

1. Power up the G500H system with the GDU 620 in normal mode.
2. Verify that the GDU displays valid air data within approximately one minute.
3. Verify that no unexpected alerts are present. If alerts are present, troubleshoot using Section 31-00-00 Troubleshooting.
4. Drain pitot-static system (reference table 5-01 90 Day Inspection)
5. Perform a leak check of the pitot-static system and observe the airspeed, altitude, and vertical speed for proper operation.

c) GRS 77H

1. Power up the G500H system with the GDU 620 in normal mode.
2. Verify that the GDU displays valid heading and attitude within approximately one minute. Note that heading can remain invalid if the magnetometer is near a large metal structure such as a hangar wall or if the magnetometer is close to a large ground power cart.
3. Verify that no unexpected alerts are present. If alerts are present, troubleshoot using Section 31-00-00 Troubleshooting.

d) GDU 620

1. Power up the G500H system with the GDU 620 in normal mode.
2. Verify that there are no red-Xs and that no alerts are present. If red Xs or alerts are present, troubleshoot using Section 31-00-00 Troubleshooting.

Section 12-20-00 Calibration Requirements

Condition	Calibrations Required		
	GRS 77H Pitch/Roll Offset See Section 5 of the G500H STC Installation Manual	**GRS/GMU Magnetic Calibration** See Section 5 of the G500H STC Installation Manual	**Engine Run-up Vibration Test** See Section 5 of the G500H STC Installation Manual
GRS 77H AHRS was removed and/or replaced. The mounting tray was NOT removed and the mounting tray bolts were NOT loosened.	None Required.		
GRS 77H AHRS was removed and/or replaced. The mounting tray WAS removed and/or mounting tray bolts WERE loosened.	X	X	X
GRS 77H AHRS Configuration Module was replaced.	X	X	X

CHAPTER 20

Section 20-00-00 Standard Practices

This chapter contains maintenance information and procedures that are common standard practices used on the G500H installation. Information contained in this chapter is standard torque charts and application procedures, corrosion prevention, painting, mechanical fastener sealing, and dye penetrant inspection techniques.

Section 20-10-00 Torques Maintenance Practices

1. Torque Wrenches

a) Torque Wrench Accuracy

Torque wrenches must be of good quality and calibrated at least once a year. Any torque wrench that has been dropped or abused should be calibrated to ensure continued accuracy.

b) Application of Torque Wrench Loads

(1) Be sure the bolt and nut and the surface they bear on are clean and dry, unless otherwise specified by the manufacturer.

(2) Run the nut down to near contact with the washer or bearing surface and check the friction drag torque required to turn the nut. Add the friction drag torque to the desired torque to arrive at the “final torque” to be registered on the torque wrench indicator.

(3) Whenever possible, apply the torque to the nut instead of the bolt. This will reduce rotation of the bolt in the hole and reduce wear.

(4) Apply a smooth even pull when applying torque pressure.

(5) If special adapters are used which will change the effective length of the torque wrench, the final torque indication or wrench setting must be adjusted accordingly. To determine the torque wrench setting or indication with adapter installed reference Figure 20-01.

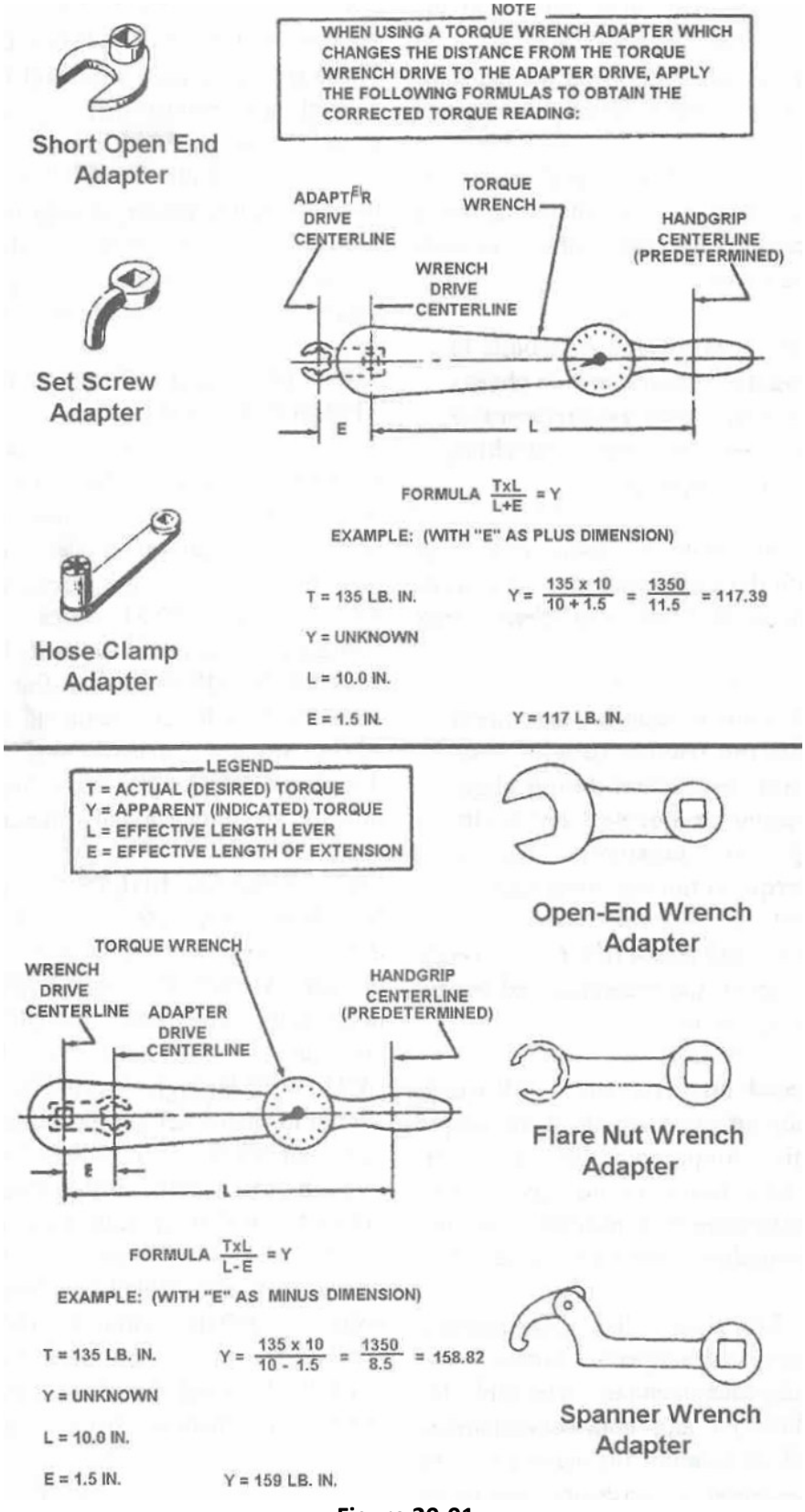
NOTE
WHEN USING A TORQUE WRENCH ADAPTER WHICH CHANGES THE DISTANCE FROM THE TORQUE WRENCH DRIVE TO THE ADAPTER DRIVE, APPLY THE FOLLOWING FORMULAS TO OBTAIN THE CORRECTED TORQUE READING:
Short Open End Adapter
Set Screw Adapter
Hose Clamp Adapter
ADAPTER DRIVE CENTERLINE
TORQUE WRENCH
HANDGRIP CENTERLINE (PREDETERMINED)
WRENCH DRIVE CENTERLINE
E
L
FORMULA TxL / L+E = Y
EXAMPLE: (WITH "E" AS PLUS DIMENSION)
T = 135 LB. IN.
Y = 135 x 10 / 10 + 1.5 = 1350 / 11.5 = 117.39
Y = UNKNOWN
L = 10.0 IN.
E = 1.5 IN.
Y = 117 LB. IN.
LEGEND
T = ACTUAL (DESIRED) TORQUE
Y = APPARENT (INDICATED) TORQUE
L = EFFECTIVE LENGTH LEVER
E = EFFECTIVE LENGTH OF EXTENSION
Open-End Wrench Adapter
TORQUE WRENCH
WRENCH DRIVE CENTERLINE
ADAPTER DRIVE CENTERLINE
HANDGRIP CENTERLINE (PREDETERMINED)
Flare Nut Wrench Adapter
FORMULA TxL / L-E = Y
EXAMPLE: (WITH "E" AS MINUS DIMENSION)
T = 135 LB. IN.
Y = 135 x 10 / 10 - 1.5 = 1350 / 8.5 = 158.82
Y = UNKNOWN
L = 10.0 IN.
E = 1.5 IN.
Y = 159 LB. IN.
Spanner Wrench Adapter

Figure 20-01

20-10-00

2. Torque Wrenches

Warning: Do not exceed maximum allowable torque value. Overstressing of fastener may result.

Standard hardware torque values are given in the following tables 20-01 through table 20-03. Table 20-01 gives recommended torque values for fine thread fasteners, shear and tension applications. Table 20-02 gives recommended torque values for coarse thread fasteners, shear and tension applications. Table 20-03 gives recommended torque values for phillips head screws.

Table 20-01- Recommended Torque Values for Fine Thread Fasteners

Thread Size Fractional (decimal)	Shear		Tension	
	Recommended in-lb (N m)	Maximum in-lb (N m)	Recommended in-lb (N m)	Maximum in-lb (N m)
8-36 (0.1640-36)	7-9 (0.79-1.02)	12 (1.36)	12-15 (1.36-1.69)	20 (2.26)
10-32 (0.1900-32)	12-15 (1.36-1.69)	25 (2.82)	20-25 (2.25-2.82)	40 (4.51)
¼-28 (0.2500-28)	30-40 (3.38-4.51)	60 (6.77)	50-70 (5.64-7.90)	100 (11.29)
5/16-24 (0.3125-24)	60-85 (6.77-9.60)	140 (15.81)	100-140 (11.29-15.81)	225 (25.41)
3/8-24 (0.3750-24)	95-110 (10.73-12.42)	240 (27.11)	160-190 (18.07-21.46)	390 (44.05)
7/16-20 (0.4375-20)	270-300 (30.49-33.88)	500 (56.48)	450-500 (50.83-56.48)	840 (94.88)
½-20 (0.5000-20)	290-410 (32.75-46.31)	660 (74.55)	480-690 (54.22-77.94)	1,100 (124.25)
9/16-18 (0.5625-18)	480-600 (54.22-67.77)	960 (108.44)	800-1,000 (90.36-112.96)	1,600 (180.73)
5/8-18 (0.6250-18)	660-780 (74.55-88.10)	1,400 (158.14)	1,100-1,300 (124.25-146.84)	2,400 (271.10)
¾-16 (0.7500-16)	1,300-1,500 (146.84-169.44)	3,000 (338.88)	2,300-2,500 (259.80-282.40)	5,000 (564.80)
7/8-14 (0.8750-14)	1,500-1,800 (169.44-203.32)	4,200 (474.43)	2,500-3,000 (282.40-338-88)	7,000 (790.72)
1-12 (1.0000-12)	2,200-3,300 (248.51-372.76)	6,000 (677.76)	3,700-5,500 (417.95-621.28)	10,000 (1129.6)
1-1/8-12 (1.1250-12)	3,000-4,200 (338.88-474.43)	9,000 (1016.6)	5,000-7,000 (564.80-790.72)	15,000 (1694.4)
1-1/4-12 (1.2500-12)	5,400-6,600 (609.98-745.53)	15,000 (1694.4)	9,000-11,000 (1016.6-1242.6)	25,000 (2824.0)

Table 20-02. Recommended Torque Values for Coarse Thread Fasteners

Thread Size Fractional (decimal)	Shear		Tension	
	Recommended in-lb (N m)	Maximum in-lb (N m)	Recommended in-lb (N m)	Maximum in-lb (N m)
8-32 (0.1640-32)	7-9 (0.79-1.02)	12 (1.36)	12-15 (1.36-1.69)	20 (2.26)
10-24 (0.1900-24)	12-15 (1.36-1.69)	21 (2.37)	20-25 (2.25-2.82)	35 (3.95)
¼-20 (0.2500-20)	25-30 (2.82-3.38)	45 (5.08)	40-50 (4.51-5.64)	75 (8.47)
5/16-18 (0.3125-18)	48-55 (5.42-6.21)	100 (11.29)	80-90 (9.03-10.16)	160 (18.07)
3/8-16 (0.3750-16)	95-100 (10.73-11.29)	170 (19.20)	160-185 (18.07-20.89)	275 (31.06)
7/16-14 (0.4375-14)	140-155 (15.81-17.50)	280 (31.62)	235-255 (26.54-28.8)	475 (53.65)
½-13 (0.5000-13)	240-290 (27.11-32.75)	520 (58.73)	400-480 (45.18-54.22)	880 (99.40)
9/16-12 (0.5625-12)	300-420 (33.88-47.44)	650 (73.42)	500-700 (56.48-79.07)	1,100 (124.25)
5/8-11 (0.6250-11)	420-540 (47.44-60.99)	900 (101.66)	700-900 (79.07-101.66)	1,500 (169.44)
¾-10 (0.7500-10)	700-950 (79.07-107.31)	1,500 (169.44)	1,150-1,600 (129.90-180.73)	2,500 (282.40)
7/8-9 (0.8750-9)	1,300-1,800 (146.84-203.32)	2,700 (474.43)	2,200-3,000 (248.51-338-88)	4,600 (519.61)
1-8 (1.0000-8)	2,200-3,000 (248.51-338.88)	4,500 (508.32)	3,700-5,000 (417.95-564.80)	7,600 (858.49)
1-1/8-8 (1.1250-8)	3,300-4,000 (372.76-451.84)	7,200 (813.31)	5,500-6,500 (621.28-734.24)	12,000 (1355.5
1-1/4-8 (1.2500-8)	4,000-5,000 (451.84-564.80)	10,000 (1129.6)	6,500-8,000 (734.24-903.68)	16,000 (1807.4 N m)

Table 20-03. Recommended Torque Values for Phillips Head Fasteners

Thread Size Fractional (decimal)	Recommended in-lb (N m)	Maximum in-lb (N m)
8-32 (0.1640-32	12-15 (1.36-1.69)	23 (2.59)
10-32 (0.1900-32)	20-25 (2.25-2.82)	35 (3.95)
¼-28 (0.2500-28)	60-70 (6.77-7.90)	90 (10.16)
5/16-24 (0.3125-24)	110-125 (12.42-14.12)	150 (16.94)
3/8-24 (0.3750-24)	150-175 (16.94-19.76)	225 (25.41)
7/16-20 (0.4375-20)	230-280 (25.98-31.62)	450 (50.83)
½-20 (0.5000-20)	550-650 (62.12-73.42)	850 (96.01)
9/16-18 (0.5625-18)	750-900 (84.72-101.66)	1,200 (135.55)
5/8-18 (0.6250-18)	1,100-1,300 (124.25-146.84)	1,600 (180.73)

20-10-00

Section 20-30-00 Painting Maintenance Practices

The following procedures should be used to touch-up paint flaking, scratches, nicks, and gouges.

Warning: Cleaning solvents and epoxy primer are flammable. Cleaning solvents, epoxy primer, and alodine can cause burns and irritation when skin is contacted. Vapors are harmful and caustic to eyes; Goggles must be worn for eye protection. Cleaning solvents and alodine are poisonous. Vapors are harmful to life or health; work should be performed with proper ventilation and / or respirators should be worn while working with Cleaning solvents, epoxy primer and alodine.

1. Paint Touch-Up of Small Areas

Use the following procedures to touch-up paint of small sanded areas and Nicks, Scratches, Gouges, Etc., that do not go through paint and primer to bare metal.

a. Wipe surface clean with trichloroethane, MIL-T-81533, or equivalent cleaning solvent, and wipe dry immediately.

b. Apply coat of epoxy polymide primer, MIL-P-23377F or equivalent, to match original. Feather primer coating onto surrounding color coat. Allow primer to air dry for 30 minutes.

c. Apply topcoat to match original finish.

Section 20-40-00 Corrosion Control Maintenance Practices

1. Corrosion Control

The G500H mounting components are fabricated primarily of aluminum. All components should be inspected regularly for any signs of corrosion. The following procedures should be used for removing corrosion and treating affected areas.

2. Corrosion Removal

Remove corrosion by either chemical or mechanical means.

a) Paint Removal, Chemical

Caution: Do not use chemical paint stripper on composite materials. Chemical paint strippers can cause composite components to debond and / or loose adhesion of the epoxy matrix.

(1) Mask all non-metallic surfaces in area to be stripped as well as areas where solution may get entrapped.

Warning: Paint stripper can cause burns and irritation when it contacts skin; proper gloves should be worn. Vapors are harmful and caustic to eyes; Goggles must be worn for eye protection. Paint stripper is poisonous. Vapors are harmful to life or health; work should be performed with proper ventilation and / or respirators should be worn while working with paint stripper.

(2) Using a fiber brush, apply sufficient paint stripper, (Turco 5873), to cover area of removal.

Note: If paint stripper evaporates quickly or works slowly, cover area with plastic sheet.

(3) Allow paint remover to remain on surface for a time sufficient to cause wrinkling and lifting of paint (about 10-30 minutes).

(4) Using non-metallic scraper or abrasive pads, (3M scotchbrite 63), scrub area to further loosen paint.

(5) Re-apply paint stripper, (Turco 5873), as necessary in areas where paint remains tightly adherent.

(6) Wash and scrub surface with demineralized water and alkaline cleaner to neutralize paint stripper.

(7) Remove masking materials and any residual paint or stripper

(8) Rinse with demineralized water.

b) Paint Removal, Mechanical

Caution: Do not sand into or expose composite fibers. Do not remove more material than necessary. Do not use aluminum oxide abrasive materials on epoxy/graphite materials.

Use abrasive flap wheel, abrasive disk, abrasive paper, or plastic media blast to remove paint.

c) Corrosion Removal

Note: Aircraft shall be electrically grounded during corrosion removal operations. When removing exterior corrosion from electronic boxes, the unit case shall be electrically grounded during the complete operation.

(1) Corrosion shall be removed by the mildest method possible.

(a) Hand scrub with dry non-metallic brush/pad. (3M scotchbrite 63 cellulose/nylon scouring pad).

(b) Use abrasive cloth. (Aluminum oxide 240 grit). Caution: Do not use on epoxy/graphite materials.

(c) Use 320 grit sandpaper.

(d) Glass bead blast.

(e) Use 240 grit abrasive wheel.

Note: On high strength steel, do not use power tools other than a flap brush or mandrel with abrasive mat; overheating and notching may occur.

(2) Ensure all active corrosion and corrosion products have been removed.

(3) Using 320 grit sandpaper blend edges of paint (if applicable) surrounding repair area to create a smooth transition. Vacuum area thoroughly to remove all contaminates.

(4) Apply aluminum surface treatment if applicable. (Ref. Item 4. Below).

(5) Touch-up primer and paint to match original

3. Mechanical Defects (Nicks, Scratches, Gouges, Etc.)

a) Determine if damage is through the paint. If not touch-up the paint (Ref. Section 20-30-00,).

b) If damage is through the paint surface prepare area for paint touch-up using following methods.

Note: On high strength steel, do not use power tools other than a flap brush or mandrel with abrasive mat; overheating and notching may occur.

(1) Remove defect using flap wheel, abrasive disk, abrasive paper, or plastic media blast.

(2) Using 320 grit sandpaper, blend edges of paint surrounding repair area to create a smooth transition.

(3) Apply aluminum surface treatment if applicable. (Ref. Item 4. Below).

(4) Touch-up primer and paint to match original.

4. Aluminum Alloy Surface Touch-Up Treatment

Note: If there is any question of whether or not the protective coating is removed, surface treatment shall be applied.

Warning: Alodine and solvents can cause burns and irritation when it contacts skin; proper gloves should be worn. Vapors are harmful and caustic to eyes; Goggles must be worn for eye protection. Alodine is poisonous. Vapors are harmful to life or health; work should be performed with proper ventilation and / or respirators should be worn while working with Solvents and alodine. Solvent cleaners are flammable.

a) Scuff surface using 3M scotchbrite 63 cellulose/nylon scouring pad.

b) Wipe exposed surface with isopropyl alcohol or aliphatic naphtha. Allow area to air dry for 10 minutes. Do not touch or otherwise contaminate surface after solvent wipe.

c) Apply Alodine 1200 or equivalent with cotton swap, non-metallic brush, or by dipping. Maintain moist surface for 1-3 minutes with repeated application. Surface will become amber or brown in color.

d) Irrigate surface with demineralized or distilled water, to remove surface treatment chemical. Allow to air dry for approximately 1 hour.

e) If there are any surface without color change, repeat procedure.

f) Apply paint touch-up as required. (Ref Section 20-30-00)

Section 20-50-00 Mechanical Fastener Sealing Methods

Seal mechanical fasteners as shown using the following:

1. MTC-20-01-01-310 Use of Sealing Compounds, and
2. MCT 20-05-01 Sealing

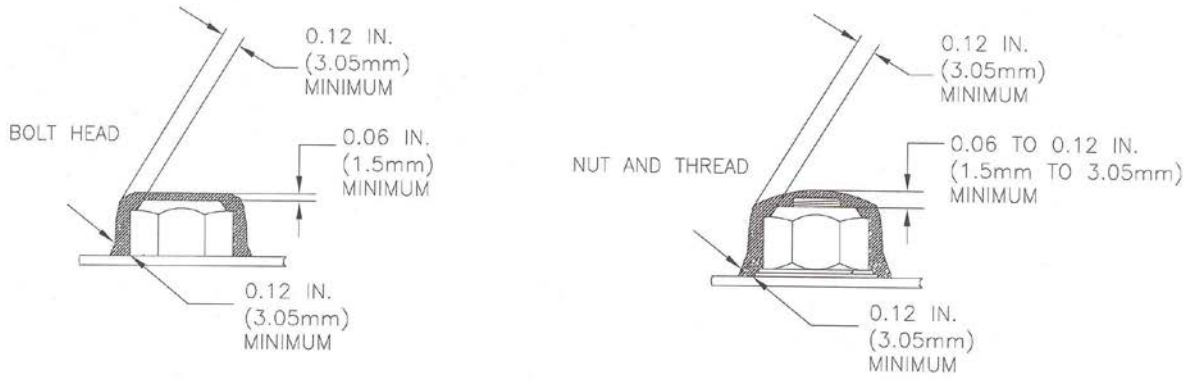

Figure 20-02. Mechanical Fastener Sealing

Section 20-90-00 Dye Penetrant Inspection Methods

Warning: solvents can cause burns and irritation when it contacts skin; proper gloves should be worn. Vapors are harmful and caustic to eyes; Goggles must be worn for eye protection. Vapors are harmful to life or health; work should be performed with proper ventilation and / or respirators should be worn while working with Solvents. Solvent cleaners are flammable.

Use the following steps to perform dye penetrant inspection:

1. Using cleaning solvent trichloroethane, MIL-T-81533, clean area to be inspected.

   Note: Parts to be inspected must be dry and heated to at least 70° F (21.1° C), but not over 130° F (54.4° C).

   Note: Manufacturers instructions on Dye Penetrant Kit take precedence over the following instructions.

2. Apply penetrant from dye penetrant kit, MIL-25135, by brushing, spraying, or by dipping. Allow to stand for a minimum of 2 minutes.

3. Remove excess penetrant with remover (available with dye penetrant kit), or by cleaning with plain water. Allow part to dry.

4. Apply a light even layer of developer from dye penetrant kit by brushing, spraying, or by dipping. When dipping, avoid excess quantity.

5. Penetrant, which has penetrated into cracks (or other openings) in the surface of the part will be drawn out by the developer resulting in a bright red indication.

6. If part is serviceable or repairable, clean part free of penetrant and developer with trichloroethane, MIL-T-81533 cleaning solvent

CHAPTER 31

Section 31-00-00 Instruments

1. Description and Operation

The Garmin G500H Flight Display System consists of an instrument panel mounted GDU 620 display and remote mounted LRUs which provide data to the display. The GDU 620 provides controls for the G500H system and a PFD and MFD in the pilot's primary field of view. The remote mounted LRUs include one GRS 77H AHRS, one GMU 44 Magnetometer, one GDC 74H ADC, and one GTP 59 OAT probe.

The G500H system depends on electrical power to function. The Garmin Display Unit (GDU), Attitude and Heading Reference System (AHRS), and Air Data Computer (ADC) are connected to the aircraft main bus.

The major components of the G500H are circuit breaker protected with push-pull type circuit breakers available to the pilot. These breakers are located in the pedestal (30 α) circuit breaker panel and are labeled as shown in Table 31-01.

Table 31-01 Circuit Breakers

Label	Unit Controlled
PFD	Garmin Display Unit (PFD/MFD), GDU 620
AHRS	Attitude and Heading Reference System, GRS 77H
ADC	Air Data Computer, GDC 74H

2. Removal and Installation

If any G500H LRUs are removed and reinstalled or a new unit is installed, verify that the LRU unit power-up self-test sequence is successfully completed and no failure messages are annunciated on the GDU 620 display.

If any work has been done on the rotorcraft that could affect the system wiring or any interconnected equipment, verify the G500H system unit power-up self-test sequence is successfully completed and no failure messages are annunciated on the GDU 620 display.

Whenever removing or installing units, remove power from the LRU by removing aircraft power or opening the LRU circuit breaker.

a) GMU 44, Magnetometer Removal and Installation

i Removal

1. Access the GMU 44 magnetometer (reference Section 6-00-00 Dimensions and Access).
2. Unscrew the three screws that hold the GMU 44 to its mounting rack.
3. Carefully lift the GMU 44 from the rack.
4. Disconnect the wiring harness.

ii Installation

1. Visually inspect the connectors to ensure there are no bent or damaged pins. Repair any damage.
2. Connect the wiring harness to the GMU 44.
3. Lower the GMU 44 into the rack and secure the plate with the three Phillips screws.

Original GMU 44 is Reinstalled

If the original GMU 44 was reinstalled, then software loading is not required. This does not include units that were returned for repair as their software and configuration files are deleted during the repair testing process. Recalibration is required only if the mount for the magnetometer was changed. If the magnetometer mount was changed, refer to Section 5.6.2 of the G500H STC Installation Manual for the GRS 77H/GMU 44 Magnetic Calibration.

New, Repaired or Exchange GMU 44 is Installed

If a new, repaired, or exchange GMU 44 unit is installed, then software must be loaded and the GRS 77H/GMU 44 Magnetic Calibration must be performed. Refer to Section 5 of the G500H STC Installation Manual for instructions on software loading (5.4.3) and Magnetic Calibration (5.6.2).

iii Return to Service

After removing and reinstalling the GMU 44, the following return-to-service checks should be performed (reference Section 12-00-10 Return to Service Checks).

b) GDC 74H, Air Data Computer

i Removal

1. Access the GDC 74H, (reference Section 6-00-00, Dimensions and Access)
2. Disconnect the pitot/static plumbing from the rear of the unit. Disconnect the single connector.
3. Remove the two (2) screws on the mounting plate near the pitot/static ports. Loosen the other two (2) screws.

4. Carefully remove the unit from its mounting location.

ii Installation

1. Position the unit and fasten using the four (4) screws.
2. Connect the pitot/static plumbing.
3. Inspect the connector and pins for damage. Repair any damage.
4. Connect the connector to the unit, ensuring that each jackscrew is secured.

Original GDC 74H is Reinstalled

If the original GDC 74H is re-installed, then no software loading is required. This does not include units that were returned for repair as their software and configuration files are deleted during the repair testing process.

New, Repaired or Exchange GDC 74H is Installed

If a new, repaired, or exchange GDC 74H unit is installed, then software must be loaded to the unit. Refer to Section 5.4.4 of the G500H STC Installation Manual for more information.

GDC 74H Configuration Module is Replaced

If the GDC 74H Configuration Module is replaced, the GDC 74H must be configured. Refer to Section 5.5.8 of the G500H STC Installation Manual

iii Return to Service

After removing and reinstalling the GDC 74H, the return-to-service checks must be performed (reference Section 12-00-00 Return-to-Service Check).

C) GRS 77H

i Removal

1. Disconnect the GRS 77H connector.
2. Loosen the four Phillips thumbscrews with a screwdriver.
3. Gently lift the GRS 77H from the mounting plate (if the supports for the mounting plate are removed, the GRS 77H must be recalibrated)

ii Installation

1. Place the GRS 77H on the mounting plate, ensuring the orientation is correct.
2. Fasten the unit to the plate using the Phillips thumbscrews. Recommended torque is 22-25 inch pounds.

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3. Visually inspect the connectors to ensure there are no bent or damaged pins. Repair any damage.
4. Connect the connector to the GRS 77H, ensuring that each slidelock is secured on both sides.

Original GRS 77H is Reinstalled

If the original GRS 77H is reinstalled, then no software loading is required. This does not include units that were returned for repair as their software and configuration files are deleted during the repair testing process. Reference Section 12-20-00 Calibration Requirements to determine whether recalibration is required.

New, Repaired, or Exchange GRS 77H is Installed

If a new, repaired, or exchange GRS 77H unit is installed then software must be loaded per Section 5.4.2 of the G500H STC Installation Manual. Reference Section 12-20-00 Calibration Requirements to determine whether re-calibration is required.

GRS 77H Configuration Module is Replaced

If the GRS 77H Configuration Module is replaced, the GRS 77H must be re-calibrated. Reference Section 12-10-20 Calibration Requirements.

iii Return to Service

After removing and reinstalling the GRS 77H, the return-to-service check should be performed. (Reference Section 12-00-10)

d) GDU 620 MFD

i Removal

1. Remove the six mounting screws from the bezel of the GDU 620.
2. Pull the GDU 620 far enough out from the instrument panel to access the three rear connectors.
3. Disconnect the rear connectors.
4. Remove the GDU 620.

ii Installation

1. Visually inspect the connectors to ensure that there are no bent or damaged pins. Repair any damage.
2. Connect the rear connectors, ensuring that each slidelock is secured on both sides.
3. Set the GDU 620 into place.

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4. Install the six mounting screws into the bezel of the GDU 620.

NOTE: The installation configuration settings are stored in the configuration module and will be retained when the GDU 620 is replaced with a new unit. User settings, such as map orientation preferences, are stored internally and will be lost when the GDU 620 is replaced with a new unit.

Original GDU 620 is Reinstalled

If the original GDU 620 is reinstalled, then no software loading is required. This does not include units that were returned for repair as their software and configuration files are deleted during the repair process. No configuration is required.

New, Repaired or Exchange GDU 620 is Installed

If a new, repaired, or exchange GDU 620 unit is installed, then software must be loaded. No configuration is required.

NOTE: Upon first power-up after installing a new GDU 620, it is normal to see a series of "LOADING…" messages appear on the screen. These messages indicate that the GDU 620 is updating its configuration settings from the configuration module.

Refer to Section 5 of the G500H STC Installation Manual for the GDU 620 Software Loading procedure (5.4.1), followed by the Manifest Configuration (5.5.5) and the Configuration Module Update (5.5.12).

GDU 620 Configuration Module is Replaced

If the GDU 620 Configuration Module is replaced, the GDU 620 will update the configuration module from its internally-stored settings when the UPDT CFG soft key is pressed. If the GDU 620 is replaced at the same time as the Configuration Module, then the System Setup will need to be performed per Section 5.5 of the G500H STC Installation Manual.

3. Illustrated Parts List

This section contains information on parts for the G500H Flight Display System, for use in ordering replacements if necessary.

Table 31-01 Parts List for Figure 31-01

ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	1	115-01568-00	BRACKET, MOUNTING, GMU 44, FAA-PMA, EUROCOPTER AS350	GARMIN
2	1	115-01569-00	BRACKET, SUPPORT, GMU 44, FAA-PMA, EUROCOPTER AS350	GARMIN
3	6	MS20426AD5-5	RIVET, SOLID, COUNTERSUNK 100 DEG, PRECISSION HEAD, 5/32 IN OD, 5/16 IN LONG	
4	16	MS20470AD4-4	RIVET, SOLID, UNIVERSAL HEAD	
5	A/R	MIL-S-8802	SEALING COMPOUND, TEMPERATURE RESISTANT, HIGH ADHESION	
6	3	211-60037-08	SCREW, MACHINE, PAN HEAD, CROSS-RECESSED, BRASS, 0.1380-32 UNC-2A	GARMIN
7	1	115-00481-10	RACK, INSTALL, MODIFIED, GMU 44	GARMIN
8	1	011-00870-10	GMU 44 MAGNETOMETER	GARMIN

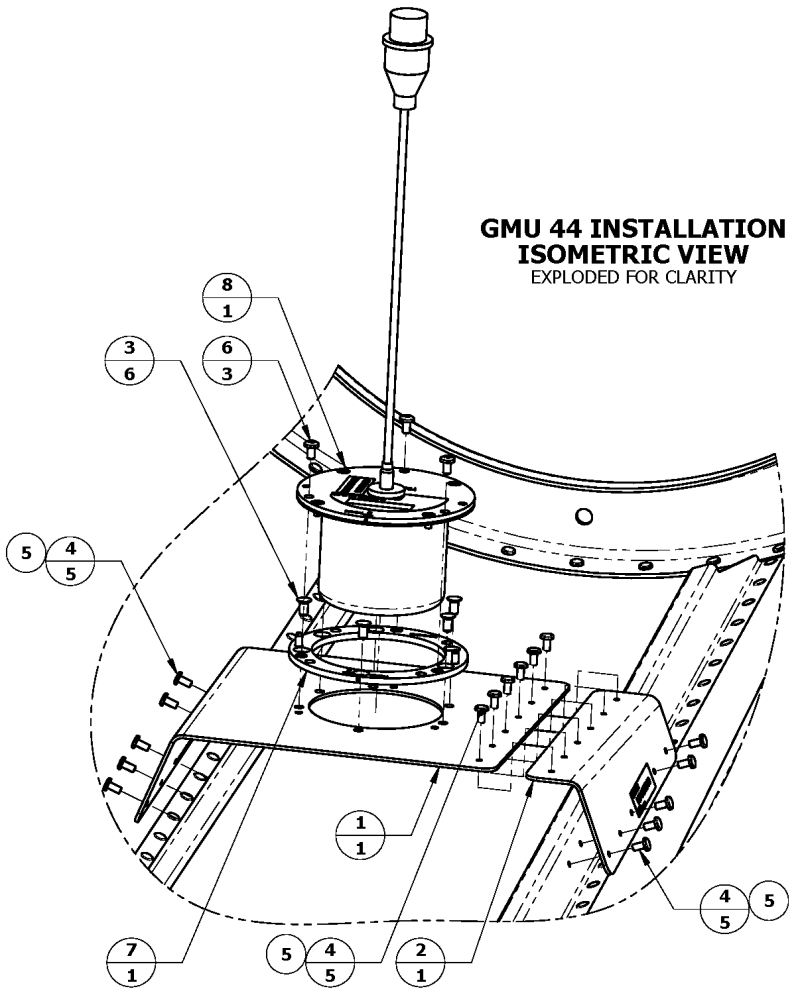

Figure 31-01
GMU 44 MAGNETOMETER INSTALLATION, EXPLODED VIEW
(Reference Table 31-01)

Table 31-02 Part Lists for Figures 31-02 and 31-03					
ITEM NUMBER	RH QTY	LH QTY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	-	1	115-01757-00	BRACKET, SUPPORT, AFT, LH SHELF, FAA-PMA, EUROCOPTER AS350	GARMIN
2	2	-	115-01755-00	BRACKET, SUPPORT, RH SHELF, FAA-PMA, EUROCOPTER AS350	GARMIN
3	-	1	115-01756-00	BRACKET, SUPPORT, FWD, LH SHELF, FAA-PMA, EUROCOPTER AS350	GARMIN
4	-	1	115-01758-00	RH SHELF	GARMIN
5	1	-	115-01759-00	LH SHELF	GARMIN
6	8	8	AN3-3A	BOLT	
7	8	8	AN3-4A	BOLT	
8	8	8	MS21042-3	NUT	
9	24	24	NAS1149F0332P	WASHER	
10	8	8	MS21075-3	NUTPLATE	
11	16	16	MS20426AD3-3	RIVET	
12	-	1	NAS43DD3-24	SPACER	
13	-	2	MS21266-1	GROMMET	

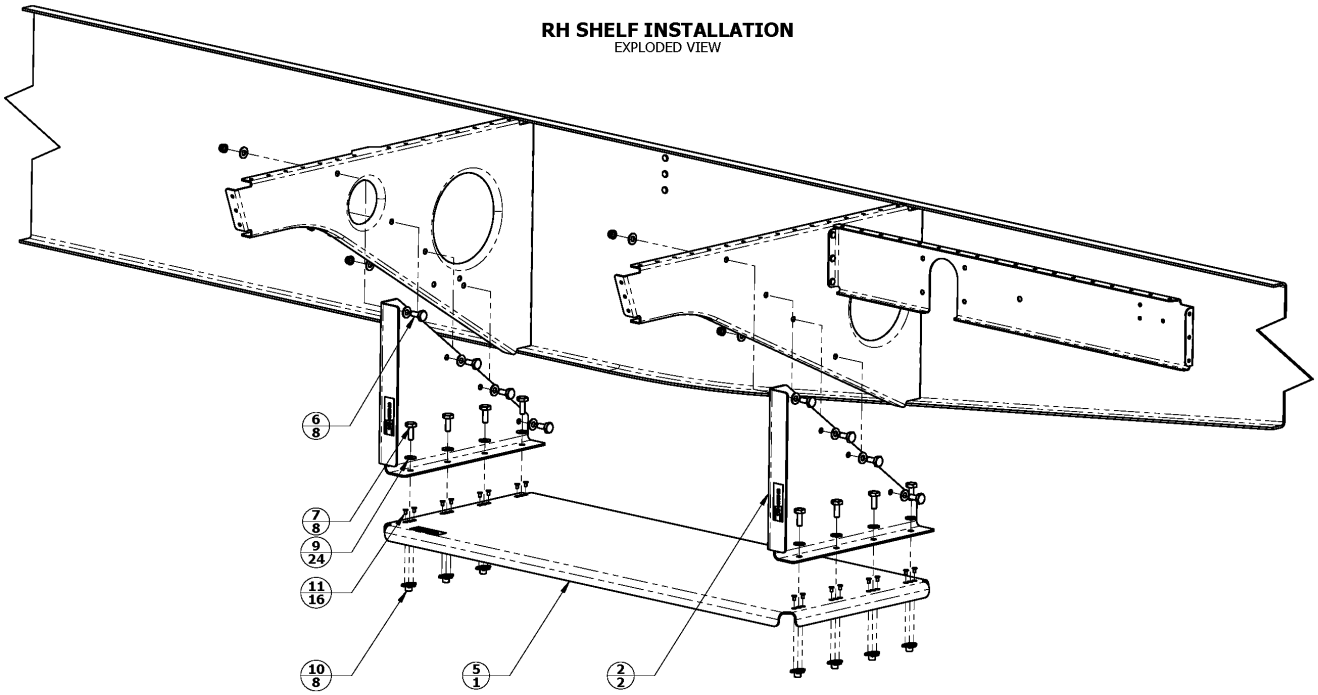

Figure 31-02
RH SHELF INSTALLATION
(Reference Table 31-02)

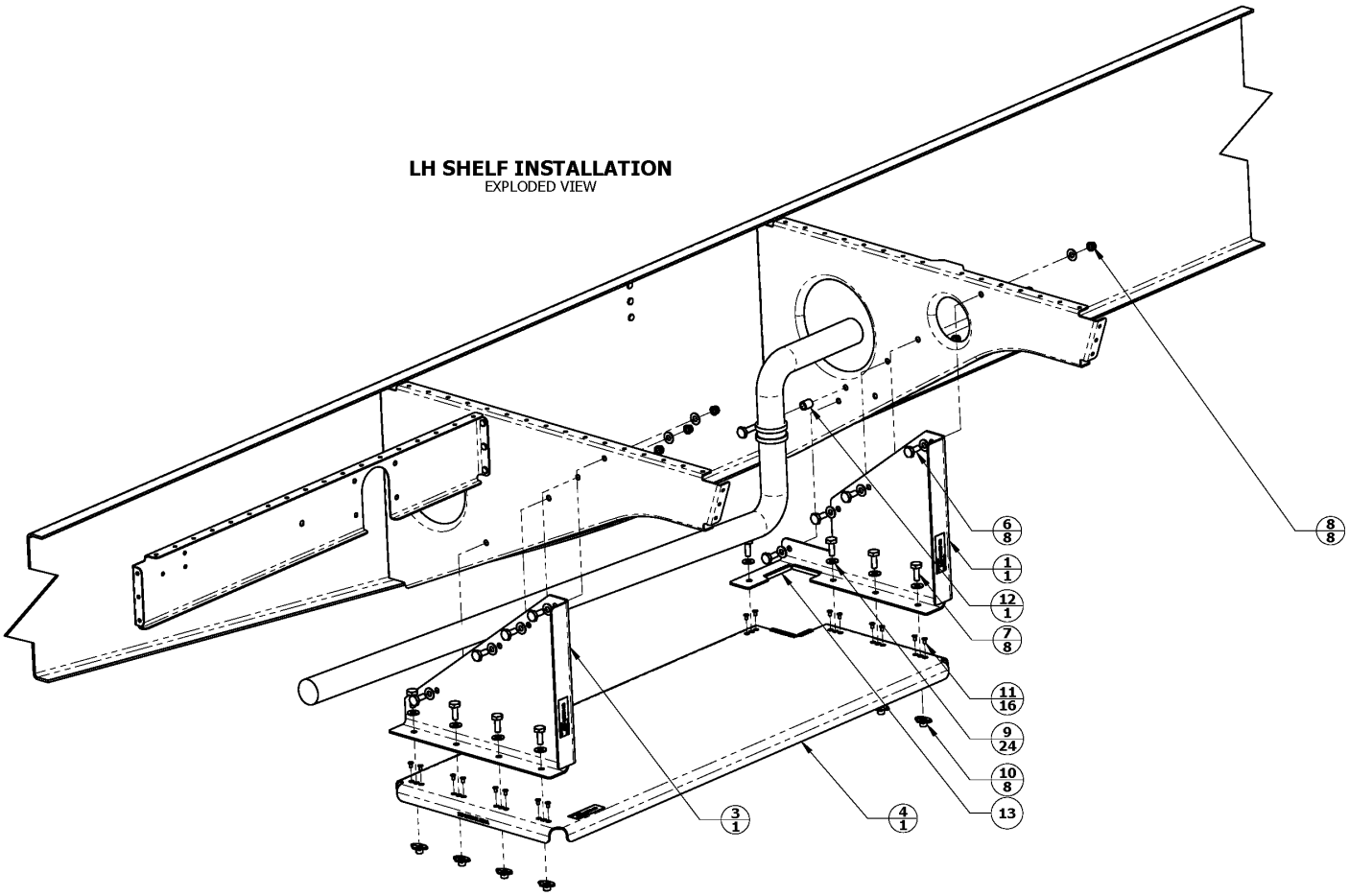

Figure 31-03
LH SHELF INSTALLATION
(Reference Table 31-02)

Table 31-03 Parts List for Figure 31-04					
ITEM NUMBER	RH QTY	LH QTY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	-	1	190-00792-03	LH SHELF INSTALLATION	GARMIN
2	1	-	190-00792-03	RH SHELF INSTALLATION	GARMIN
3	1	1	011-00882-11	GDC 74H ADC	GARMIN
4	4	4	MS21075-3	NUTPLATE	
5	8	8	MS20426AD3-3	RIVET	
6	4	4	AN525-10R8	SCREW	

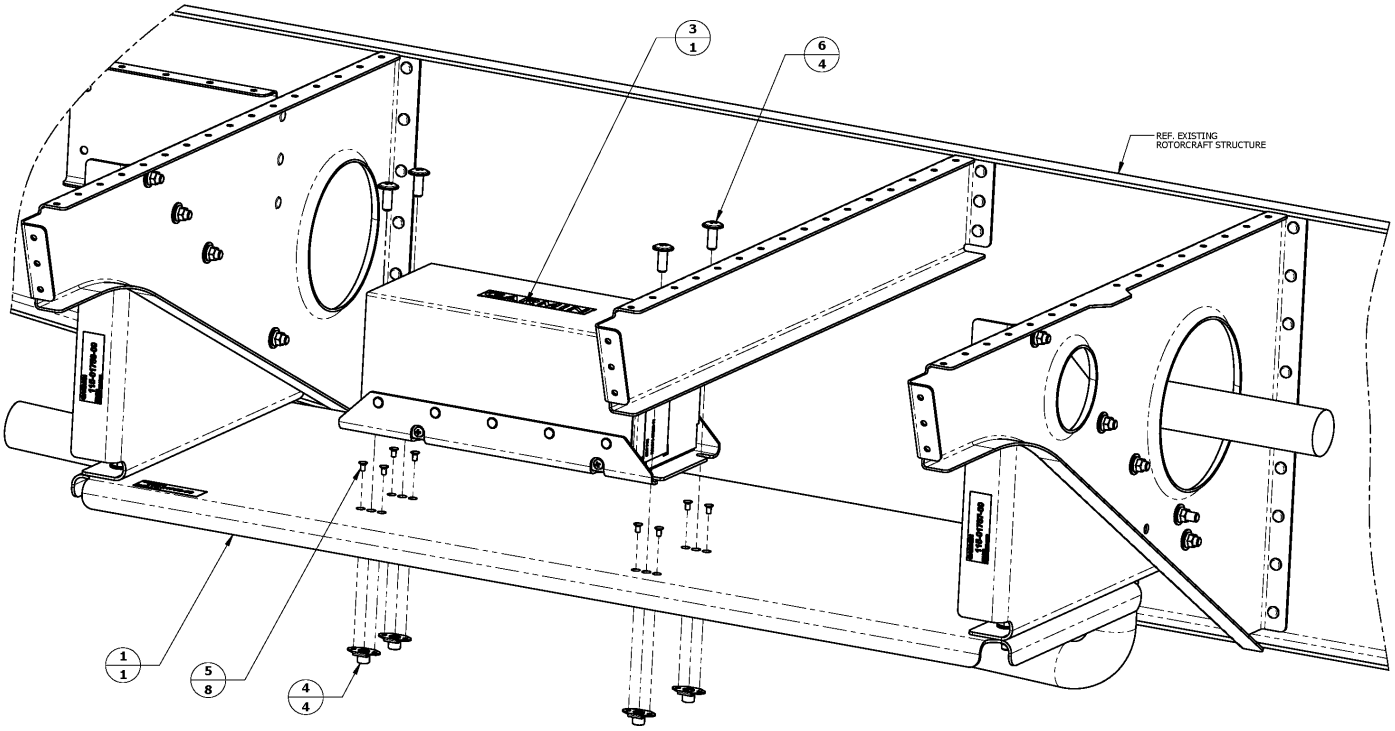

Figure 31-04
GDC 74H INSTALLATION LH, EXPLODED VIEW (SHOWN);
GDC 74H INSTALLATION RH, EXPLODED VIEW (OPPOSITE – NOT SHOWN)
(Reference Table 31-03)

Table 31-04 Parts List for Figure 31-05					
ITEM NUMBER	RH QTY	LH QTY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	-	1	190-00792-03	LH SHELF INSTALLATION	GARMIN
1	1	-	190-00792-03	RH SHELF INSTALLATION	GARMIN
3	1	1	011-00868-20	GRS 77H AHRS	GARMIN
4	1	1	115-00459-00	GRS 77 MOUNT RACK	GARMIN
5	5	5	MS21075-3	NUTPLATE	
6	10	10	MS20426AD3-3	RIVET	
7	5	5	AN525-10R8	SCREW	

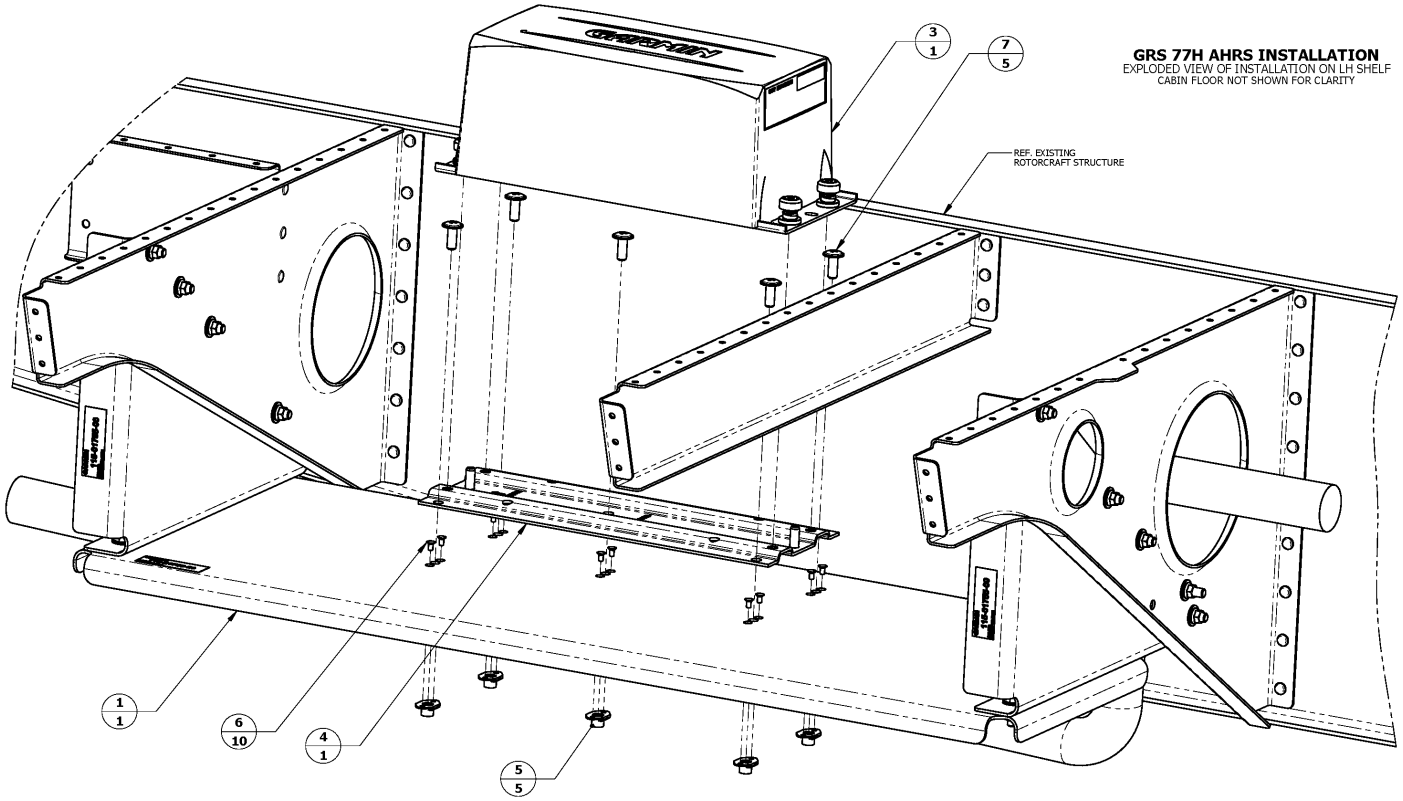

Figure 31-05
GRS 77H INSTALLATION LH, EXPLODED VIEW (SHOWN)
GRS 77H INSTALLATION RH, EXPLODED VIEW (OPPOSITE – NOT SHOWN)
(Reference Table 31-04)

Table 31-05 Part List for Figure 31-06				
ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	1	M81714/67-18	MOUNTING TRACK	
2	REF	M81714/60-22-05	TERMINAL BLOCK	
3	2	AN525-10R7	SCREW	
4	2	NAS1149F0332P	WASHER	
5	2	MS21042-3	NUT	

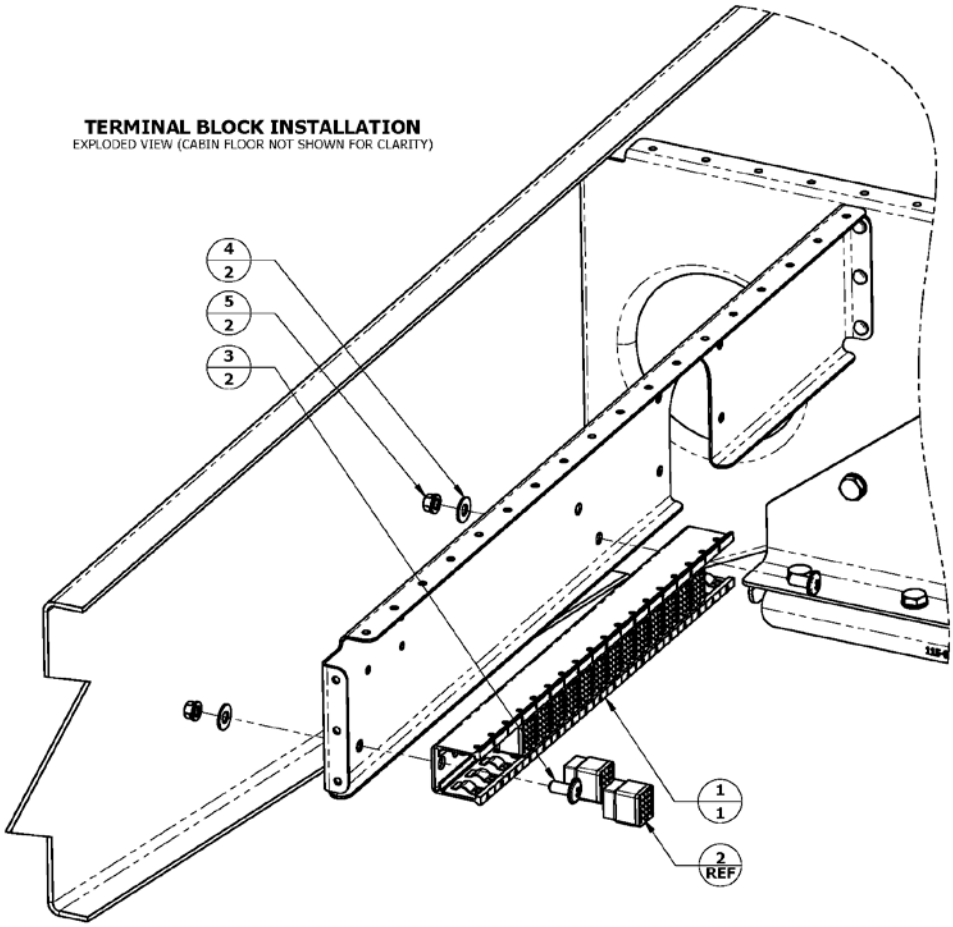

Figure 31-06
TERMINAL BLOCK INSTALLATION, EXPLODED VIEW
(Reference Table 31-05)

Table 31-06 Parts List for Figure 31-07				
ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	1	011-00978-00	GTP 59 OAT PROBE	GARMIN
2	1	115-01567-00	DOUBLER	GARMIN
3	8	CR3213-4-03	RIVET	CHERRYMAX
4	A/R	MIL-S-8802	SEALING COMPOUND	

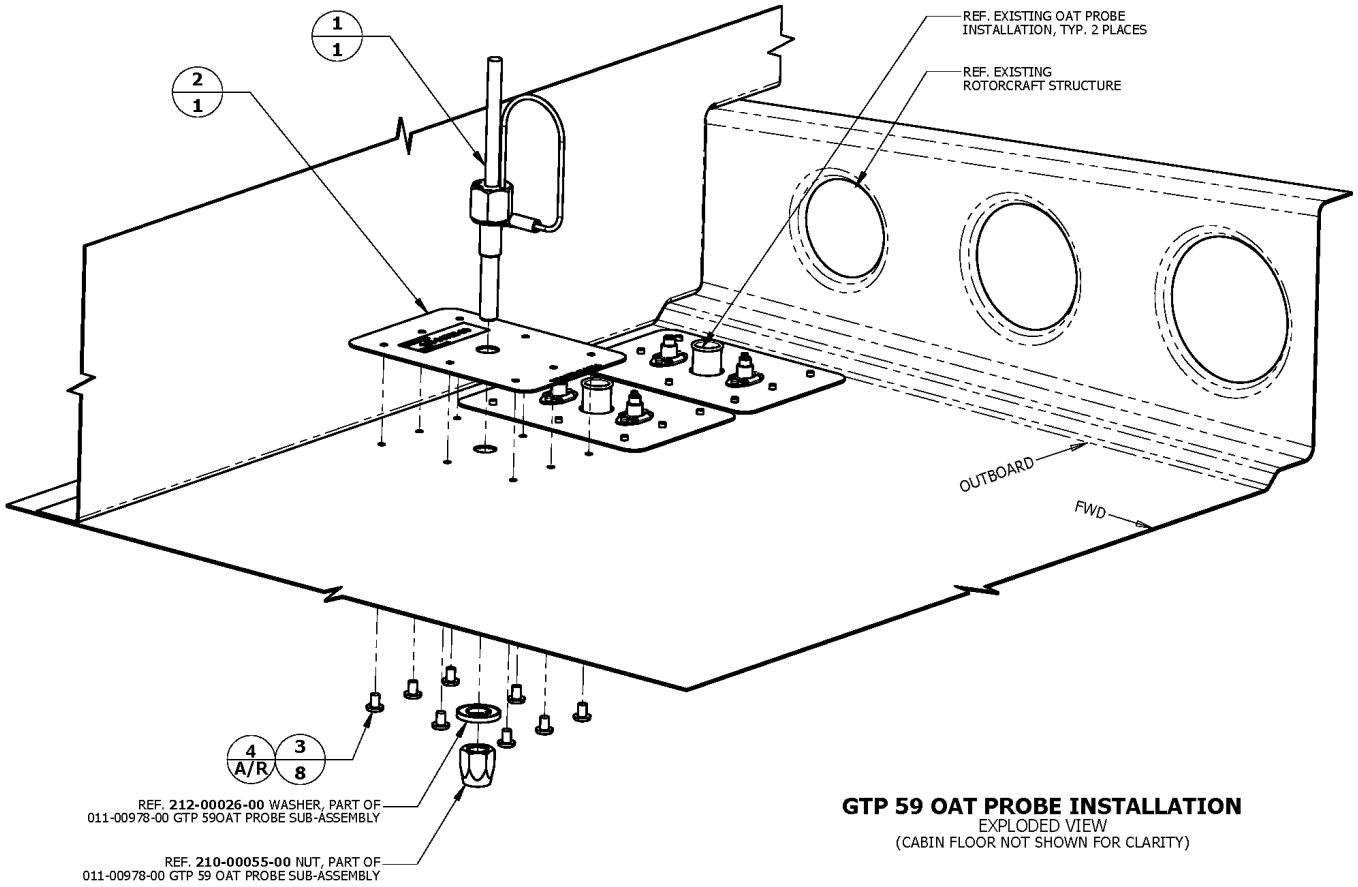

Figure 31-07
GTP 59 OAT PROBE INSTALLATON, EXPLODED VIEW
(Reference Table 31-06)

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Table 31-07 Parts List for Figures 31-08 through 31-12							
ITEM NUMBER	QUANTITY				PART NUMBER	DESCRIPTION	MANUFACTURER
	-01	-02	-03	-04			
1*	1	-	-	-	011-02764-01	INSTRUMENT PANEL ASSEMBLY, OPTION 1	GARMIN
2*	-	1	-	-	011-02764-02	INSTRUMENT PANEL ASSEMBLY, OPTION 2	GARMIN
3*	-	-	1	-	011-02764-03	INSTRUMENT PANEL ASSEMBLY, OPTION 3	GARMIN
4*	-	-	-	1	011-02764-04	INSTRUMENT PANEL ASSEMBLY, OPTION 4	GARMIN
5	1	1	1	1	011-01264-60	GDU 620 PFD/MFD	GARMIN
6	REF	REF	REF	REF	5956-28-01 REV. A	DIMMING CONTROL OVERLAY	AERO DYNAMIX
7	1	1	1	1	B3500BA01	V.E.M.D.	
8	REF	REF	REF	REF	704A47723068	ANNUNCIATOR PANEL	EUROCOPTER
9	REF	REF	-	-	EXISTING	3-IN NR TACHOMETER	
10	REF	REF	-	-	C4E0118-01	3-IN EYEBROW LIGHT	EUROCOPTER
11	-	REF	-	REF	EXISTING	3-IN AIRSPEED INDICATOR	
12	-	REF	-	REF	EXISTING	3-IN ALTIMETER INDICATOR	
13	REF	-	REF	-	3A43.22.35F.28.1.FU	2-IN ALTIMETER COUNTER DRUM POINTER	THOMMEN
14	REF	-	REF	-	MD25-200	2-IN AIRSPEED INDICATOR	MID-CONTINENT
15	-	-	REF	REF	EXISTING	2-IN NR TACHOMETER	
16	-	-	REF	REF	350A67-0159-20	2-IN EYEBROW LIGHT	EUROCOPTER
17	-	REF	-	REF	71450B23	LED POST LIGHT	EUROCOPTER
18	13	6	15	8	MS35214-29	SCREW	
19	2	5	-	3	MS35214-31	SCREW	
20	2	2	-	-	MS35214-33	SCREW	
21	6	6	6	6	MS35214-44	SCREW	
22	2	2	2	2	NAS1149DN632P	WASHER	
23	6	6	6	6	NAS1149DN832P	WASHER	
24	15	11	13	9	NAS620-6L	WASHER	
25	7	-	7	-	MS33737-14C	NUT	
26	2	7	2	5	MS33737-16C	NUT	
27	REF	REF	REF	REF	LED-40-17-HE-E0G3T	VIVISUN LED SWITCH	AEROSPACE OPTICS

*Reference Table 31-08 through 31-11 and Figures 31-13 through 31-16

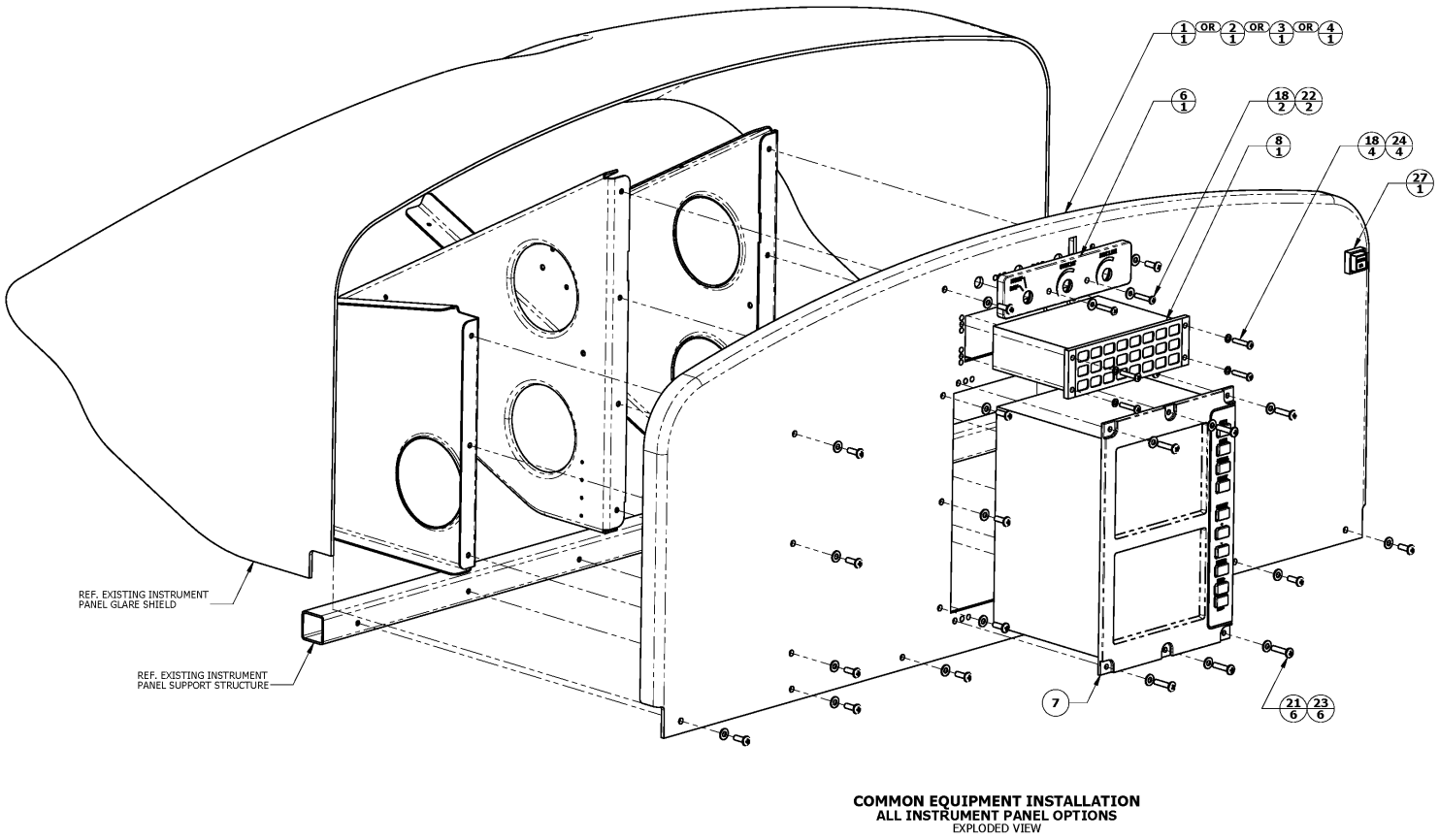
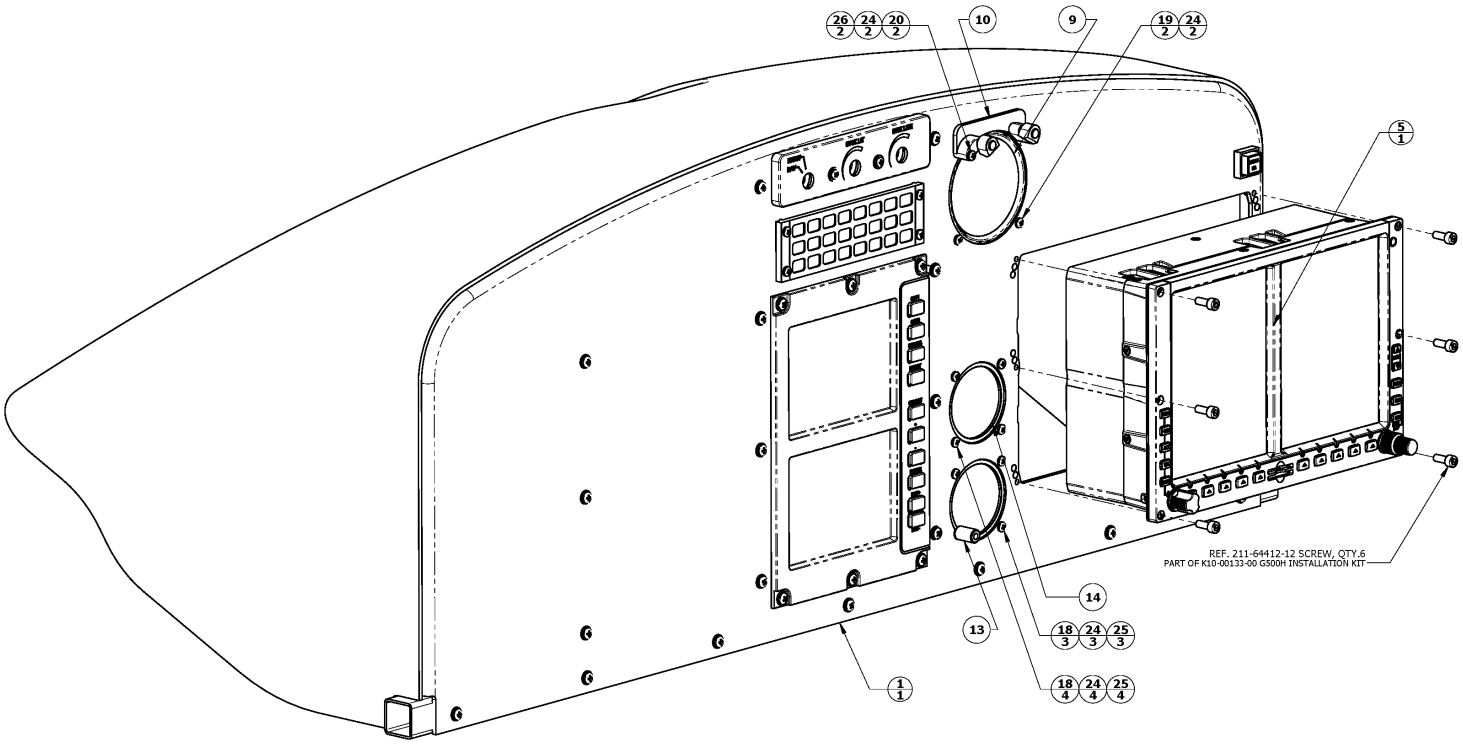
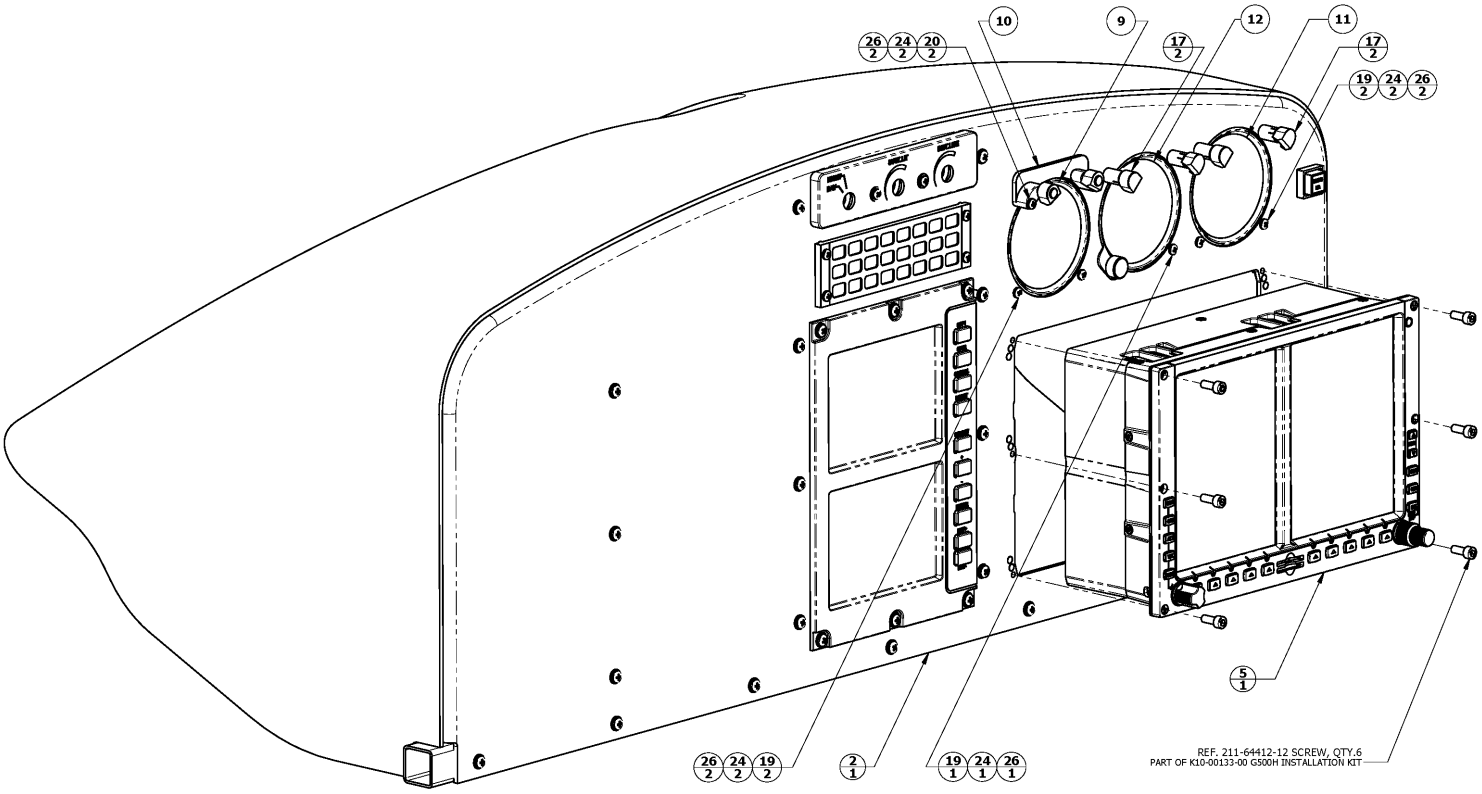


Figure 31-08
INSTRUMENT PANEL INSTALLATION
(Reference Table 31-07)



**INSTRUMENT PANEL INSTALLATION, OPTION 1,
EUROCOPTER AS350**

Figure 31-09
ITEM 1, INSTRUMENT PANEL INSTALLATION
(Reference Table 31-07)



INSTRUMENT PANEL INSTALLATION, OPTION 2, EUROCOPTER AS350

Figure 31-10
ITEM 2, INSTRUMENT PANEL INSTALLATION
(Reference Table 31-07)

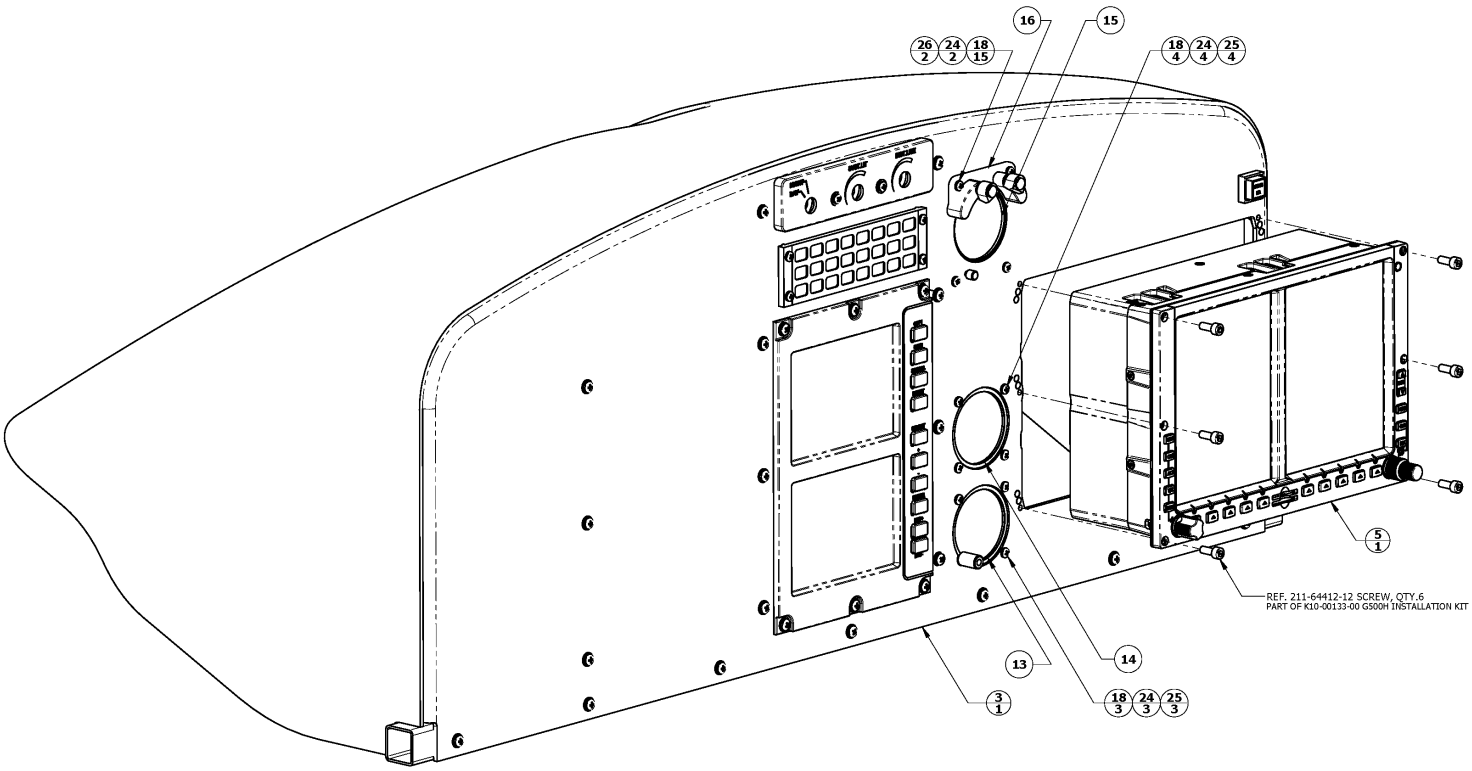


Figure 31-11
ITEM 3, INSTRUMENT PANEL INSTALLATION
(Reference Table 31-07)

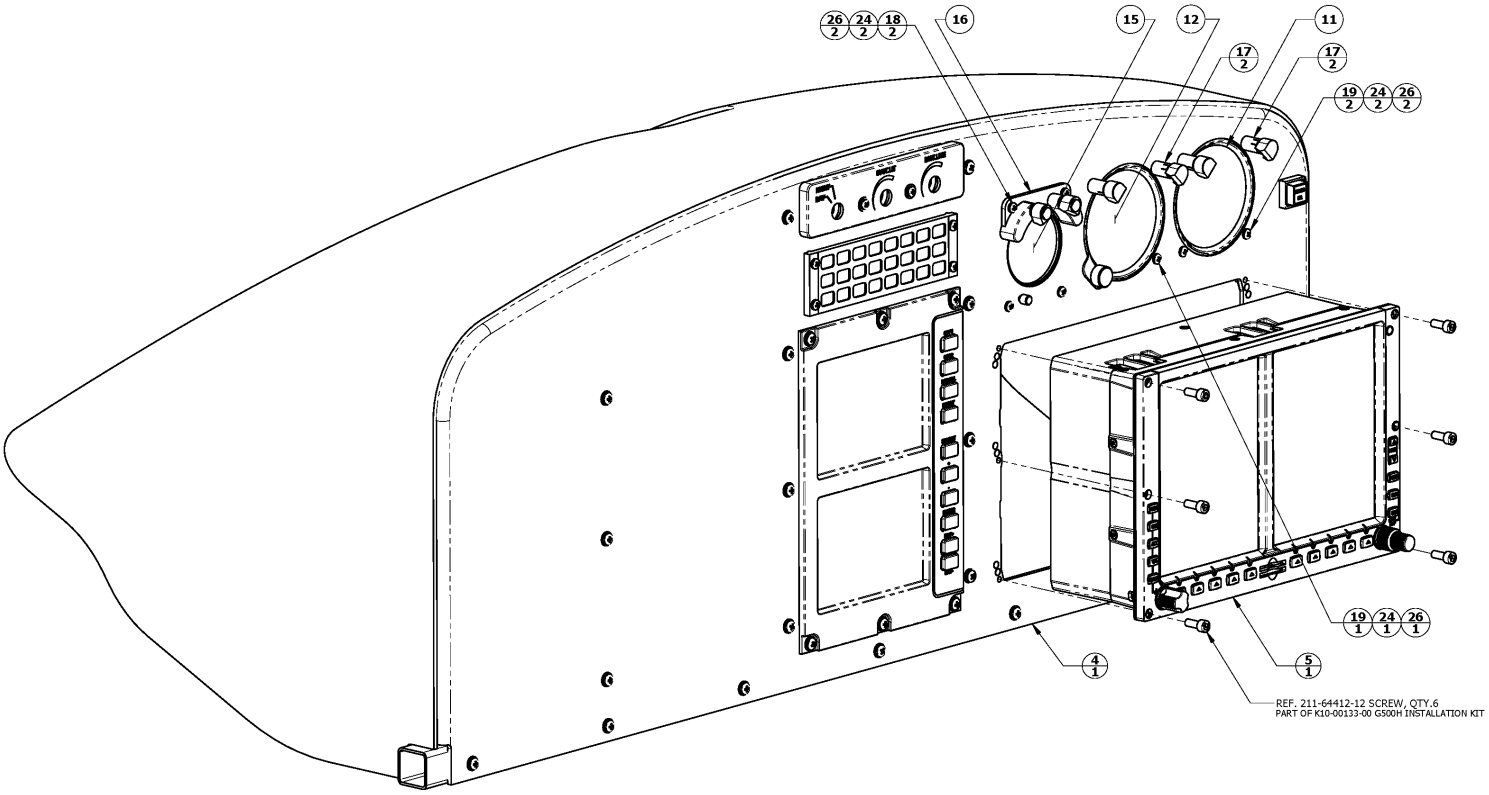


Figure 31-12
ITEM 4, INSTRUMENT PANEL INSTALLATION
(Reference Table 31-07)

Table 31-08 Parts List for Figure 31-13				
ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	1	115-01760-01	OPTION 1 INSTRUMENT PANEL	GARMIN
2	1	161-02779-01	FAA-PMA LABEL	GARMIN
3	4	MS21061L08	NUTPLATE	
4	6	MS21069-08	NUTPLATE	
5	6	MS21071-06	NUTPLATE	
6	2	MS21075-08	NUTPLATE	
7	36	MS20426AD3-4	RIVET	

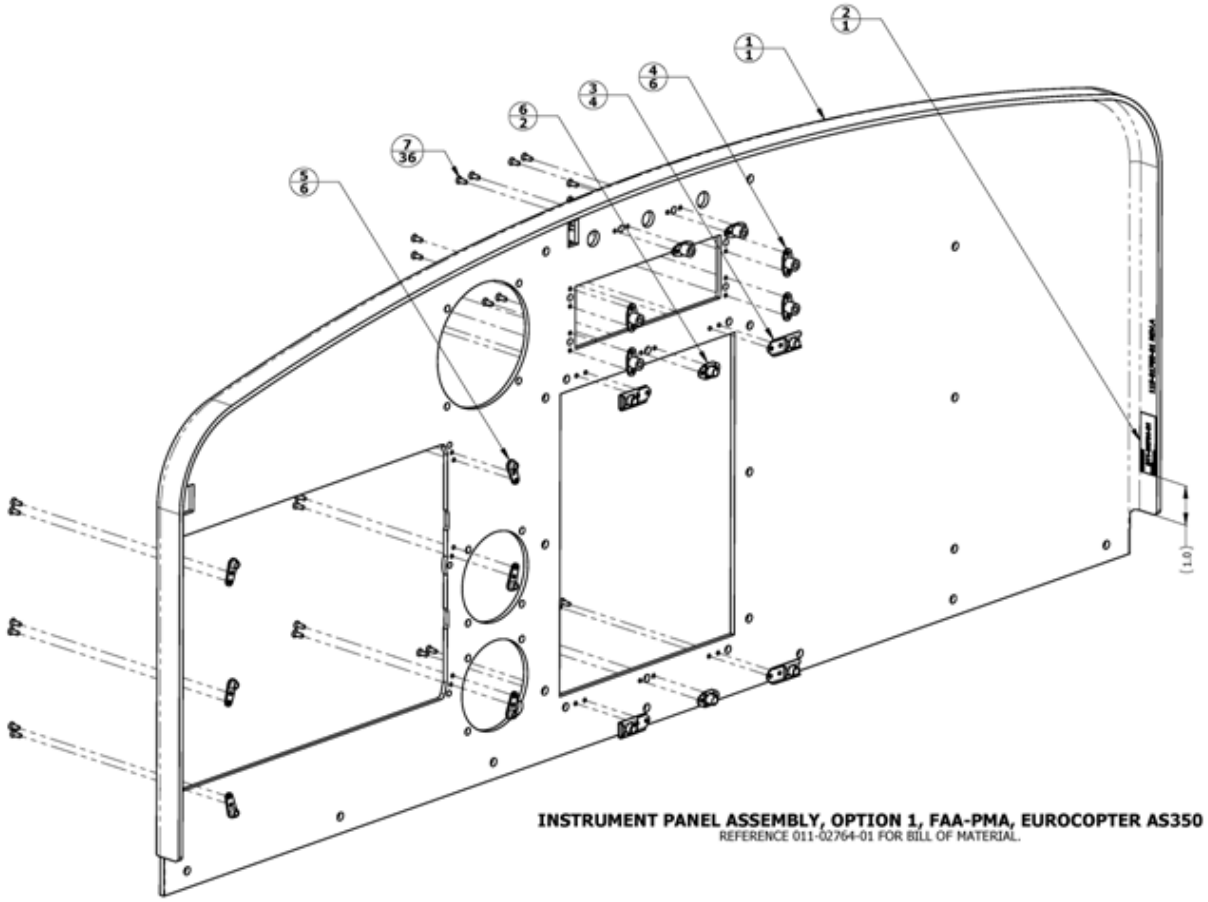


Figure 31-13
OPTION 1, INSTRUMENT PANEL ASSEMBLY
(Reference Table 31-08)

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Table 31-09 Parts List for Figure 31-14				
ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	1	115-01760-02	OPTION 2 INSTRUMENT PANEL	GARMIN
2	1	161-02779-02	FAA-PMA LABEL	GARMIN
3	4	MS21061L08	NUTPLATE	
4	6	MS21069-08	NUTPLATE	
5	6	MS21071-06	NUTPLATE	
6	2	MS21075-08	NUTPLATE	
7	36	MS20426AD3-4	RIVET	

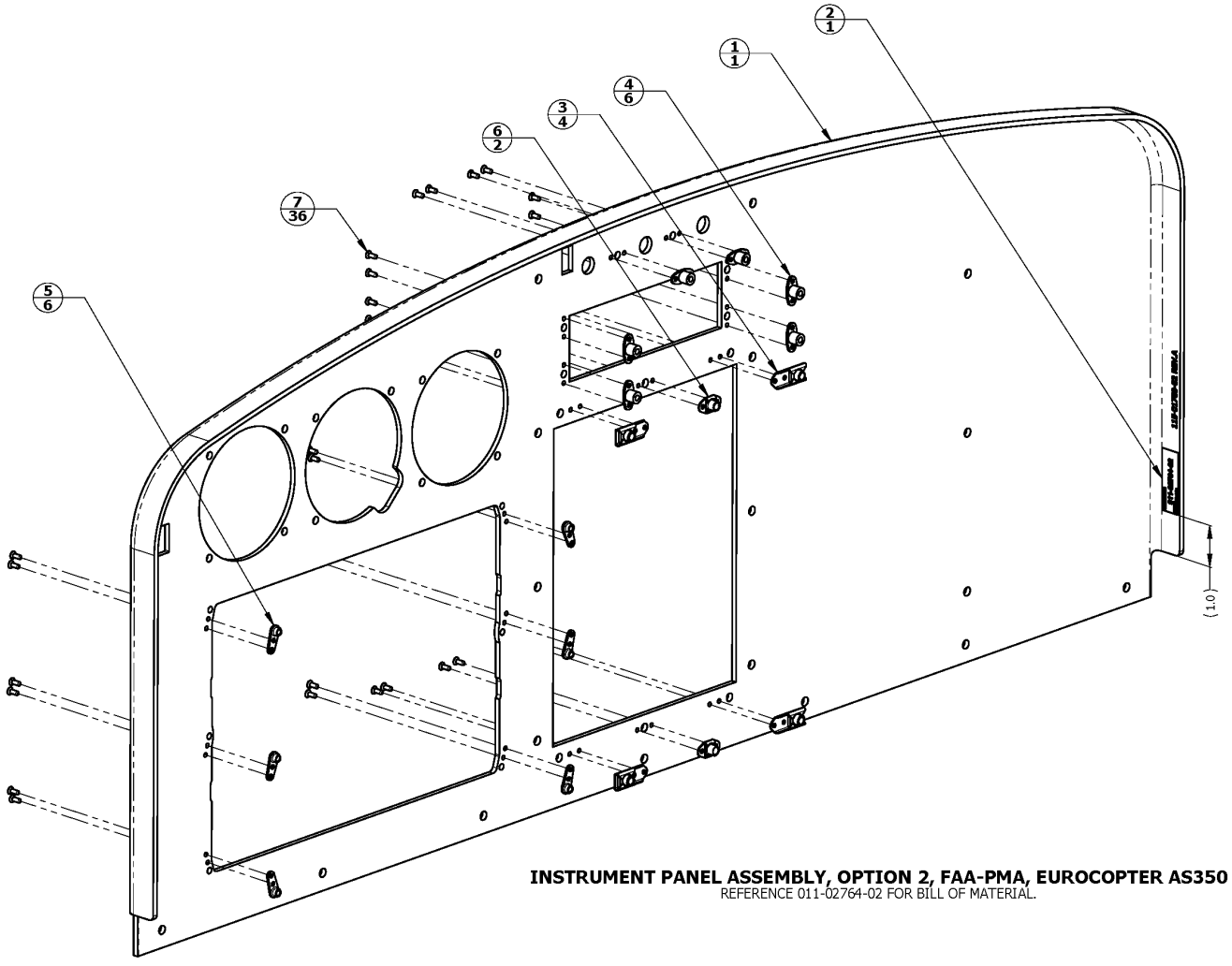

Figure 31-14
OPTION 2, INSTRUMENT PANEL ASSEMBLY
(Reference Table 31-09)

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Table 31-10 Parts List for Figure 31-15				
ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	1	115-01760-03	OPTION 3 INSTRUMENT PANEL	GARMIN
2	1	161-02779-03	FAA-PMA LABEL	GARMIN
3	4	MS21061L08	NUTPLATE	
4	6	MS21069-08	NUTPLATE	
5	6	MS21071-06	NUTPLATE	
6	2	MS21075-08	NUTPLATE	
7	36	MS20426AD3-4	RIVET	

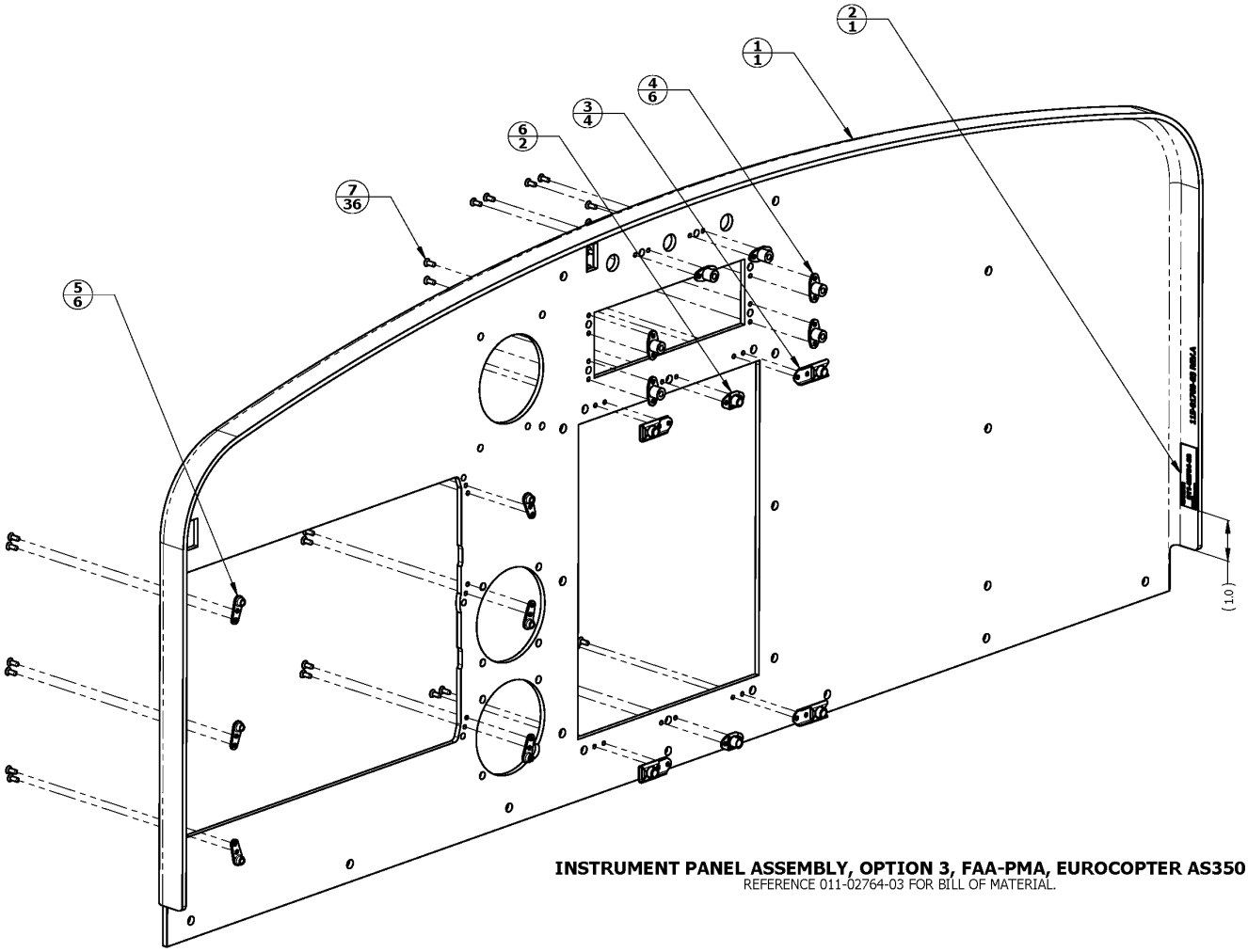

Figure 31-15
OPTION 3, INSTRUMENT PANEL ASSEMBLY
(Reference Table 31-10)

Table 31-11 Parts List for Figure 31-16				
ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION	MANUFACTURER
1	1	115-01760-04	OPTION 4 INSTRUMENT PANEL	GARMIN
2	1	161-02779-04	FAA-PMA LABEL	GARMIN
3	4	MS21061L08	NUTPLATE	
4	6	MS21069-08	NUTPLATE	
5	6	MS21071-06	NUTPLATE	
6	2	MS21075-08	NUTPLATE	
7	36	MS20426AD3-4	RIVET	

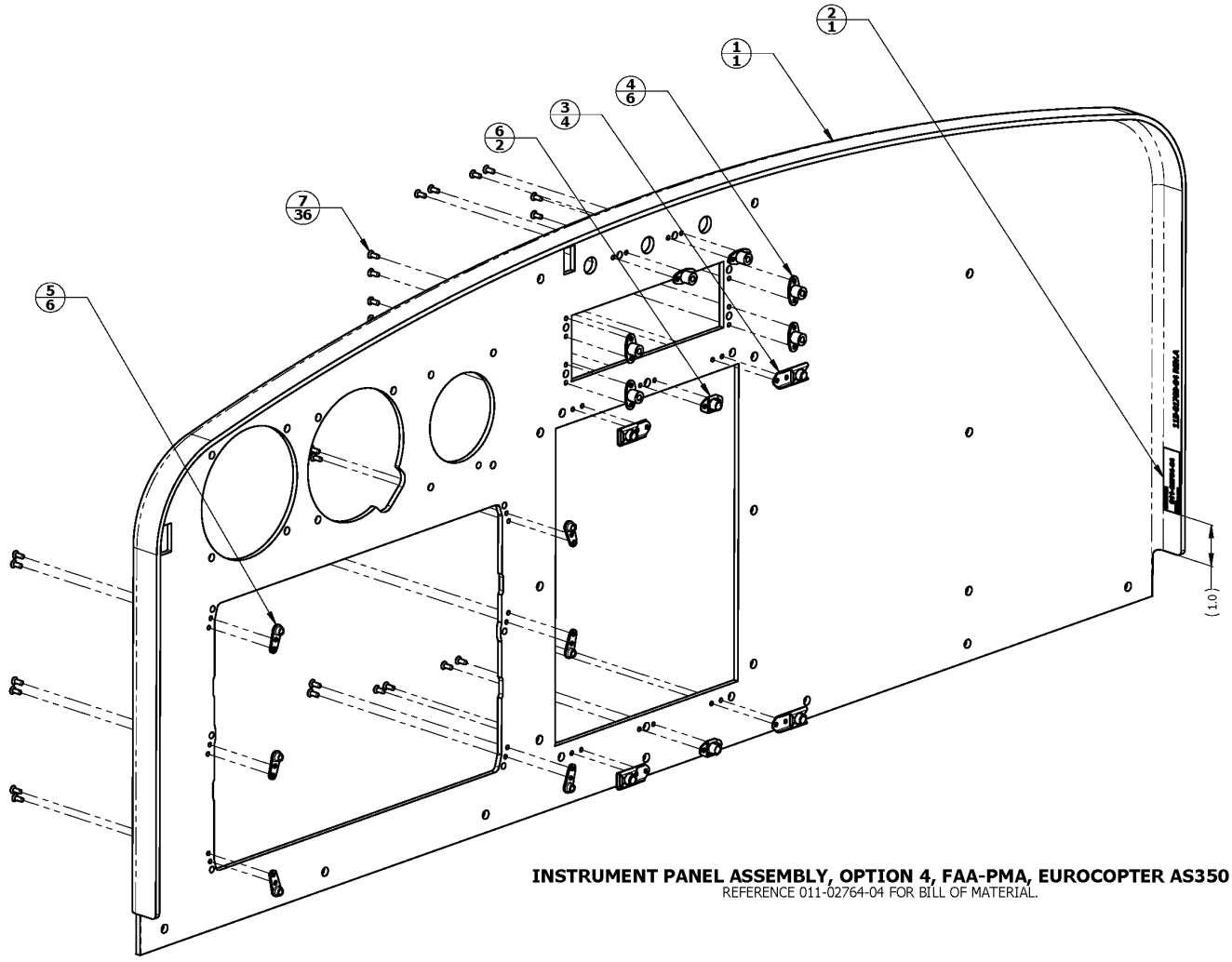

Figure 31-16
OPTION 4, INSTRUMENT PANEL ASSEMBLY
(Reference Table 31-11)

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Table 31-12 List of Consumable Materials

DESCRIPTION	P/N	VENDOR/SPECIFICATION
THREAD LOCK	242	LOCTITE
ADHESIVE	1300L	3M
Cleaning cloth, Low-Lint	--	Commercial
Mineral Spirits, Cleaning Solvent	--	MIL-PRF-680, TYP II OR ASTM-D235
Alodine	Alodine 1200	--
Alodine	Iridite 14-2	--
Paint Stripper	Turco 5873	--
Polyamide Paint Primer	--	--
Dye Penetrant Kit	--	--
Acetone	--	ASTM-D329
Isopropyl Alcohol	--	TT-I-735
Trichloroethane	--	MIL-T-81533
Nylon Scouring Pad	(3M) Scotchbrite 63	3M
240 Grit Sandpaper	--	Commercial
320 Grit Sandpaper	--	Commercial
240 Grit Aluminum Oxide Abrasive	--	Commercial
Cloth	--	Commercial
Sealant	--	MIL-S-8802
Adhesive transfer tape 950 (2")	70-0060-3057-4	3M

4. Troubleshooting guide

If error indications are displayed on the GDU 620 display unit, consult the Troubleshooting section contained in Table 31-11.

The G500H will display a number of alerts on the GDU 620 MFD. These are listed in the Table 31-12.

Table 31-13 GDU 620 Troubleshooting Guide

Problem	Cause	Solution
Unit does not power up – blank screen.	Improper wiring; circuit breaker open.	Ensure power is properly wired to the GDU 620 and the circuit breaker is closed.
	Unit intensity turned down.	Ensure that unit is not in manual intensity control mode with the intensity turned down.
All expected configuration pages are not displayed.	An Installer Unlock Card is not inserted into the GDU 620.	Insert the Installer Unlock Card P/N 010-00769-60 into the bottom slot of the GDU 620 and cycle power.
The GDC OAT probe type shows up as UNKNOWN	The RS-232 connection to the GDC 74H is not working.	Ensure that the GDC 74H RS-232 connection to the GDU is properly wired, and ensure that the GDC 74H circuit breaker is closed.
When loading software, the LRU software is not being displayed on the SOFTWARE UPLOAD page.	The software loader card is installed in the bottom slot of the GDU 620.	Insert the loader card in the top slot and cycle power to the GDU.
	The software loader card contains no information.	Repeat the process for making the software loader card.
Configuration errors are displayed on power-up, before the GDU enters normal mode.	The configuration module has not been updated.	Update the configuration module.
Vertical GPS deviation is not displayed on the GDU 620.	For 400W/500W Series units, the ARINC 429 vertical deviation labels are not being transmitted.	Enable Labels on the 400W/500W Series unit ARINC 429 configuration page.
Unable to control the GPS course when in OBS mode.	The GPS navigator is not correctly configures as LNAV1/2 or SYS1/2.	Configure the ARINC 429 inputs/outputs for LNAV1 (SYS1) or LNAV2 (SYS2) based upon whether the navigator is GPS1 or GPS2.
Data is not being received from an ARINC 429 device.	ARINC 429 bus hi and low are swapped.	Verify wiring.

Problem	Cause	Solution
(valid data is being received on the 429 input port as shown on the GDU 620 PORT MONITORING page)	Wrong device is connected to port on GDU 620.	Use correct ports (refer to interconnect details).
Data is not being received from an ARINC 429 device. (no data is being received on the 429 input port as shown on the GDU 620 PORT MONITORING page)	On the transmitting LRU, the ARINC 429 transmitter speed is not set correctly.	Set the ARINC 429 transmitter speed to correct speed.
	Wiring is not correct.	Check for continuity/shorts and correct as required.
Attitude and heading on GDU 620 red 'X' / GRS 77H resets during air data ground testing.	Attitude and heading errors/resets are possible if the air data tests are conducted indoors without a good GPS signal. With marginal or no GPS signals present, sudden changes in airspeed caused by using a pressure tester may result in attitude and heading errors and possibly cause the GRS 77H to reset. This occurs because the artificial changes in airspeed cause disagreement with the other sensor measurements internal to the GRS 77H. This sensor disagreement will not occur in the normal conditions of flight.	This is expected behavior and no troubleshooting is required if this occurs. To reduce the chances of inducing attitude and heading errors/resets while conducting the air data tests, ensure that the G500H is receiving good GPS signals.
Heading red 'X' during air data ground testing	Invalidation of heading is possible if the air data tests are conducted indoors, due to typical magnetic anomalies, even with a good GPS signal.	This is expected behavior and no troubleshooting is required if this occurs.

Table 31-14 GDU 620 Alert Troubleshooting Guide

Alert Text	Cause	Solution
AHRS1 GPS – AHRS 1 using backup GPS source.	AHRS is using the backup GPS information	Verify GPS1 power and check the wiring
AHRS1 GPS - AHRS is not receiving any GPS information	AHRS is not receiving any GPS information.	Verify GPS power and check the wiring
AHRS1 GPS – AHRS 1 operating in exclusively in no-GPS mode.	AHRS is not receiving any GPS information.	Ensure that at least one GPS has acquired a valid position.
		If GDU 620 does not have a valid position, verify wiring between GDU and GPS receiver, and configuration of GDU 620 and GPS receiver.
		If GDU has a valid GPS position, verify wiring between GDU and GRS. Also verify time mark wiring.
AHRS1 GPS – AHRS 1 not receiving backup GPS information.	AHRS is not receiving GPS information from GPS2.	Verify GPS2 power and check the wiring
AHRS1 SRVC	AHRS magnetic field model should be updated. Appears on ground only.	Update GRS 77H IGRF model (current model is with aviation database).
AHRS1 TAS	AHRS is not receiving true airspeed from ADC.	GDC not powered up. Close ADC C/B.
		GDC not receiving input from GTP 59 OAT probe. Verify wiring is correct.
		ARINC 429 connection from GDC 74H to GRS 77H is not working. Verify wiring is correct.
CAL LOST	Registry reports that it has lost calibration data.	Contact Garmin Technical Support.
CNFG MODULE	The configuration module is inoperative.	Verify wiring to configuration module
		Replace configuration module
DATA LOST	Pilot stored data was lost. Recheck data and settings.	
FAN 1 FAIL	Fan 1 has reported 0 RPM when it was powered with a PWM duty cycle higher than or equal to 10%	Inspect the GDU fan for an obstruction. Contact Garmin Technical Support.
FAN 2 FAIL	Fan 2 has reported 0 RPM when it was powered with a PWM duty cycle higher than or equal to 10%	Inspect the GDU fan for an obstruction. Contact Garmin Technical Support.

Alert Text	Cause	Solution
GDL69 CONFIG	The GDL 69 configuration information stored in the GDL 69 and the GDU 620 configuration module do not match.	With the GDU 620 in configuration mode, go to the GDL 69 page in the GDL page group. Verify that the SET and ACTIVE configuration settings are the same. If not, use the SET>ACTV soft key to copy the configuration settings from the GDU 620 into the GDL 69.
	The GDL 69 configuration was updated using another LRU (e.g. the GMX 200 or 400W/500W).	Update the GDL 69 configuration using the GDU 620.
GDU CONFIG	This error appears whenever the GDU is replaced with a GDU that was configured for a different installation.	Cycle power to the GDU. This error automatically clears on the second power up with a different configuration module.
	Error in the configuration of the GDU 620.	
GDU (1/2) COOLING	Specific GDU has poor cooling, and power usage is being reduced.	Ensure fans on indicated GDU are functioning
		Ensure fans on indicated GDU are not obstructed
GDU (1/2) DB ERR	Error in specific database, where GDU (1/2) DB denotes specific database.	Verify the correct card is installed, reload the DB on the card.
GDU (1/2) VOLTAGE	GDU supply voltage is below 12 VDC.	Increase the voltage above 12VDC.
GEO LIMITS	Location is too far north/south for GRS 77H magnetic compass.	
GPS(1/2) FAIL	No GPS1 or GPS2 data is available.	Ensure GPS (1/2) is turned on
		Verify RS-232 wiring from the GPS to the GDU 620.
GPS(1/2) PPS Failure	This alert will be set if the PPS signal has not been received in more than 5 sec. If the unit is configured for dual GPSs then the side will be specified in the error.	Ensure GPS (1/2) is turned on
		Verify 1PPS wiring from the GPS to the GDU 620.
GPS2 FPL USED	The GPS1 has failed and GPS2 is configured and operating.	
HDG FAULT	AHRS magnetometer fault has occurred.	GRS 77H not receiving information from GMU 44. Verify wiring to GMU 44.

Alert Text	Cause	Solution
HDG LOST	Heading from the GRS77/ GMU 44 is not valid.	Caused by a local magnetic anomaly. No action required.
<LRU> SERVICE	Specific LRU should be serviced, where <LRU> denotes specific LRU.	Return indicated LRU to Garmin for service.
MANIFEST	GDU has received product data for an LRU that should have a manifest entry, but is not in the manifest.	Ensure the manifest is properly configured.
	The LRU software P/N and version number in the manifest does not match the values being reported by that LRU.	Update the LRU software to match the manifest
		Update the manifest to match the LRU software
NAV1 FAIL	No navigation receiver 1 data.	
NAV2 FAIL	No navigation receiver 2 data.	
SIMULATOR	The simulator mode is active.	Ensure P6202-36 is not grounded.
SVT DISABLED - Out of available terrain region.	Location is beyond region covered by terrain database.	
SVT DISABLED - Terrain DB resolution too low.	A 30 arc-second terrain database is being used.	Update the Supplemental Data card with the 9 arc-second terrain database.
SW MISMATCH	GDU software version strings do not match.	Verify the correct SW is loaded
TRAFFIC FAIL	The traffic information system has failed.	The GDU 620 is not receiving traffic information from the traffic sensor. Verify wiring between GDU 620 and traffic sensor.
		The GDU 620 is receiving information from the traffic sensor, but the information is indicating that the traffic sensor has failed. Troubleshoot traffic system.
TRK LOST	GPS1 TRK lost. HSI defaulted to GPS2 TRK.	
TRK TRAFFIC	Heading Lost. Traffic is now based on track.	See HDG errors.

CHAPTER 98

Section 98-00-00 Wiring Diagrams and Pitot-Static System Schematics

This chapter includes the Wiring Diagrams and Pitot-Static System Schematics for the G500H Flight Display System.

Section 98-10-00 Wiring Diagrams

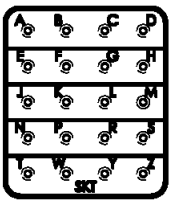
G500H EFIS System Wiring

NOTES:

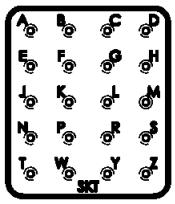
1. UNSHIELDED WIRE IS M22759/16; UNSHIELDED HIGH TEMP WIRE IS M22759/8. TWISTED SHIELDED WIRES ARE M27500-XX-TGXT14 (XX INDICATES AWG, X NUMBER OF CONDUCTORS).
2. WIRE LEGEND:
   (a) _____ NEW WIRE
   (b) ---------- EXISTING WIRE
3. ALL WIRES ARE 22 AWG EXCEPT WHERE NOTED OTHERWISE; ALL SPLICES ARE MIL-S-81824/1-X.
4. THE LENGTH OF SHIELD GROUNDS MUST NOT EXCEED 3 INCHES. GROUND DESIGNATIONS ARE - SHIELD BLOCK GROUND AIRFRAME GROUND
5. ROUTE AND TIE WIRES ALONG EXISTING ROTORCRAFT WIRE HARNESS FOLLOWING GUIDELINES SPECIFIED IN SECTION 20-02001-411 (CABLE BINDING METHODS) OF EUROCOPTER STANDARD PRACTICES MANUAL (M.T.C.)
6. RG-179 IS MIL-C-17/094G
7. THE G500H ELECTRICAL BUSSING DEPICTED ARE TYPICAL INSTALLATIONS. ACTUAL INSTALLATION MAY VARY. THE REQUIRED G500H EQUIPMENT, PFD, ADC AND AHRS, MUST BE CONNECTED TO A BUS THAT RECEIVES POWER AS SOON AS THE BATTERY MASTER SWITCH IS TURNED ON. ALL REQUIRED G500H EQUIPMENT MUST BE CONNECTED TO THE SAME BUS. THE G500H SYSTEM MUST NOT BE CONNECTED TO AN AVIONICS BUS. WHEN INSTALLING THE G500H EFIS SYSTEM IN CONJUCTION WITH A GENEVA AVIATION P132 CONSOLE, THE PFD, ADC AND AHRS CIRCUIT BREAKERS MAY BE CONNECTED TO EITHER THE PP5, PP6 OR PP9 BUS AS ALLOWED BY AN ELECTRICAL LOAD ANALYSIS OF THAT BUS.
8. SEE DETAIL A FOR LAYOUT OF TERMINAL BLOCK ITEM 1 IN THE BOM. SEE DETAIL C FOR LAYOUT OF TERMINAL BLOCK ITEM 6.
9. GPS 2 IS AN OPTIONAL CONNECTION. DO NOT CONNECT IF ONLY ONE GPS IS USED IN THE INSTALLATION.
10. THE NAV 1 AND NAV 2 CONNECTIONS MAY BOTH BE ARINC 429 OR ONE ARINC 429 AND ONE RS232 CONNECTION. CONNECTIONS MUST ONLY BE MADE TO AUTHORIZED NAV UNITS. REFER TO APPENDIX C.2 OF 190-01150-06 G500H ROTORCRAFT STC INSTALLATION MANUAL FOR ACCEPTABLE NAV UNITS AND FIGURE D-5 IN APPENDIX D FOR CONNECTIONS. ONLY APPROVED GPS WAAS UNITS LISTED IN APPENDIX C.1 MAY BE USED. REFER TO FIGURE D-4 IN APPENDIX D FOR CONNECTIONS.
11. THE NAV 2 CONNECTION IS OPTIONAL. DO NOT CONNECT IF ONLY ONE NAV IS USED IN THE INSTALLATION.
12. THE RS-232 5 NAV INPUTS MAY BE CONFIGURED AS NAV 1 OR NAV 2, NOT BOTH. REFER TO THE G500H INSTALLATION MANUAL FOR CONFIGURATION ON THE GDU 620.
13. IF THE HSVT TERRAIN FEATURE IN THE GDU 620 IS ENABLED, THE AUDIO INPUT OF THE AUDIO PANEL MUST BE UNSWITCHED AND UNMUTED. IF THE AUDIO PANEL DOES NOT HAVE AN AVAILABLE UNSWITCHED INPUT, AND THE GDU 620 AUDIO MUST BE COMBINED WITH OTHER AUDIO, REFER TO THE G500H INSTALLATION MANUAL APPENDIX E.
14. TRAFFIC SYSTEM IS OPTIONAL. DO NOT CONNECT IF A TRAFFIC SYSTEM IS NOT INCLUDED IN THE INSTALLATION. ALL WIRES ARE NOT REQUIRED FOR EVERY TRAFFIC SYSTEM. ONLY CONNECT THOSE WIRES REQUIRED BY THE INSTALLATION. REFER TO THE G500H INSTALLATION MANUAL APPENDIX E.
15. SERIAL ALTITUDE OUT IS OPTIONAL. DO NOT CONNECT IF NOT REQUIRED FOR THE INSTALLATION. RS-232 DATA IS SHADIN ALTITUDE 9600 BAUD.
16. POST MOD 073273 AND 073274, EFIS BUS CIRCUIT BREAKERS LOCATED ON RIGHT HAND SIDE OF THE PEDESTAL IN THE 44 ALPHA PANEL. WIRE NOT TO BE LONGER THAN 8 INCHES. LABEL CIRCUIT BREAKERS AS SHOWN.
17. PRE MOD 073273 AND 073274, EFIS MASTER CIRCUIT BREAKER LOCATED ON LEFT HAND SIDE OF 30 ALPHA SWITCH PANEL. WIRE NOT TO BE LONGER THAN 8 INCHES.
18. THE GDL-69/69A IS AN OPTIONAL CONNECTION. DO NOT CONNECT IF NOT INCLUDED IN THE INSTALLATION.
19. THE GSR 56 IS AN OPTIONAL CONNECTION. DO NOT CONNECT IF NOT INCLUDED IN THE INSTALLATION.
20. USE ONLY AIRCRAFT GRADE CATEGORY 5 ETHERNET CABLE SUCH AS P/N 392404 FROM ELECTRONIC CABLE SPECIALIST OR P/N E10424 FROM PIC WIRE AND CABLE.
21. THE GDU-620 MUST BE CONFIGURED FOR THE CORRECT LIGHTING BUS VOLTAGE (28 VDC) AND THE PHOTOCELL MUST BE CONFIGURED FOR PROPER AUTO-DIM WHEN THE LIGHTING. BUS IS TURNED OFF. FOR CONFIGURATION AND PROGRAMMING INSTRUCTIONS REFER TO THE GARMIN G500H ROTORCRAFT STC INSTALLATION MANUAL, 190-01150-06, REVISION 2 OR LATER FAA APPROVED REVISION FOR THE AS350 STC.
22. AIR/GROUND STATUS, GDU 620 P6201 PIN 7 TO BE CONNECTED TO AIRCRAFT WEIGHT ON WHEELS OR COLLECTIVE SWITCH. CONNECT SO THAT WHEN AIRCRAFT ON GROUND A A GROUND IS PRESENT ON PIN 7.
23. CONFIGURATION MODULES ARE MOUNTED IN THE BACKSHELL OF THE P6202, P771 AND P741 CONNECTORS.
24. CONFIGURATION MODULE HARNESS USES 28 AWG WIRES. CONTACTS SUPPLIED WITH CONFIGURATION MODULE MUST BE USED FOR CONNECTING CONFIGURATION MODULE HARNESS TO P6202, P771 OR P741.
25. FOR FURTHER WIRING INFORMATION, REFERENCE EUROCOPTER AS350 WIRING DIAGRAM MANUAL CHAPTER 24.
26. FOR FURTHER WIRING INFORMATION, REFERENCE EUROCOPTER AS350 INSTRUMENT AND CONSOLE LIGHTING WIRING DIAGRAM CHAPTER 33.
27. THE SPLICE MUST BE INSIDE OF THE CONNECTOR BACKSHELL.
28. AT GDU 620, GRS 77H AND GDC 74H, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL. THE SHIELD LEADS MUST BE LESS THAN 3 INCHES. DO NOT DAISY CHAIN.
29. REFER TO P132 GENEVA AVIATION CONSOLE INSTALLATION FOR FURTHER WIRING INFORMATION. WIRE NOT TO BE LONGER THAN 8 INCHES.
30. EFIS BUS CIRCUIT BREAKERS LOCATED ON OR BELOW PILOTS INSTRUMENT PANEL WITHIN REACH OF PILOT. LABEL CIRCUIT BREAKERS AS SHOWN.
31. INSTALLATION OF THE GMU 44 MAGNETOMETER REQUIRES A COMPLETE SURVEY OF THE PROPOSED MAGNETOMETER LOCATION. FOR MAGNETIC INTERFERENCE SURVEY INSTRUCTIONS REFER TO THE GARMIN G500H ROTORCRAFT STC INSTALLATION MANUAL, 190-01150-06, REVISION 2 OR LATER FAA APPROVED REVISION FOR THE AS350 STC.
32. FOR PROGRAMMING DISPLAYED AIRSPEED MARKINGS ON GDU 620 PFD/MFD, REFER TO GARMIN DOCUMENT 190-00792-11 GDU 620 SOFTWARE AND AIRSPEED SETTINGS SPECIFICATION.
33. RADAR ALTIMETER INTERFACE REQUIRES G500H INSTALLATION WITH OPTION 02 SOFTWARE. P6203, PIN 45 MUST BE CONFIGURED FOR RADAR ALTIMETER PUSH TO TEST FUNCTIONALITY. SEE GARMIN DOCUMENT 190-00601-04 GDU 620 INSTALLATION MANUAL FOR CONFIGURATION PROCEDURES.
34. REFERENCE GARMIN DOCUMENT 190-00792-11 GDU 620 SOFTWARE AND AIRSPEED SETTINGS SPECIFICATION FOR INFORMATION ON DIFFERENT SOFTWARE CONFIGURATIONS. THE 02 SOFTWARE IS OPTIONAL BUT MUST BE INSTALLED FOR THE FOLLOWING OPTIONAL SYSTEM INTERFACES TO FUNCTION:
    ARINC 429 RADAR ALTIMETERS ONLY:
    (a) HONEYWELL KRA-405B P/N 066-01153-XXXX
    (b) FREEFLIGHT RA-4500 P/N 84560-X2-XXXX

OPTIONS:
01 G500H WITHOUT RADAR ALTIMETER
02 G500H WITH RADAR ALTIMETER

1	1	18	010-00769-60	SD CARD, GDU 6XX, INSTALLER UNLOCK	GARMIN
1	1	17	010-00844-00	SD CARD, G500H INSTALLER DOWNLOADABLE SW	
1	-	16	006-B0223-H1	SOFTWARE VERSION 3.51, GRS77H	
-	1		006-B0223-H0	SOFTWARE VERSION 3.50, GRS77H	
1	-	15	006-B1071-30	SOFTWARE VERSION 5.00, GDU620	
-	1		006-B1071-21	SOFTWARE VERSION 4.01, GDU620	
1	1	14	011-00871-00	CONNECTOR KIT, GMU44	
1	1	13	011-01010-03	CONNECTOR KIT, GDC74	
1	1	12	011-00869-01	CONNECTOR KIT, GRS77	
1	1	11	011-01656-00	CONNECTOR KIT,GDU620	
1	1	10	7274-11-20	CIRCUIT BREAKER, 20 AMP	KLIXON
3	3	9	7277-2-5	CIRCUIT BREAKER, 5 AMP	
A/R	A/R	8	SWT316	SPIRAL WRAP, TEFLON, 3/16 IN	DALLAS AVIONICS
1	1	7	1N-4006	DIODE	
1	1	6	M81714/60-22-01	TERMINAL BLOCK	
4	4	5	B-040-22-N	CABLE TERMINATION RG/U 179	TYCO ELECTRONICS
A/R	A/R	4	RG-179	COAXIAL CABLE, 75 OHM MIL-C-17/094G	
A/R	A/R	3	392404	ETHERNET CABLE	ECS
1	1	2	M81714/67-18	TERMINAL BLOCK RAIL	
16	16	1	M81714/60-22-05	TERMINAL BLOCK	
02	**01**	**ITEM**	**PART NUMBER**	**DESCRIPTION**	**MANUFACTURER**
QTY					

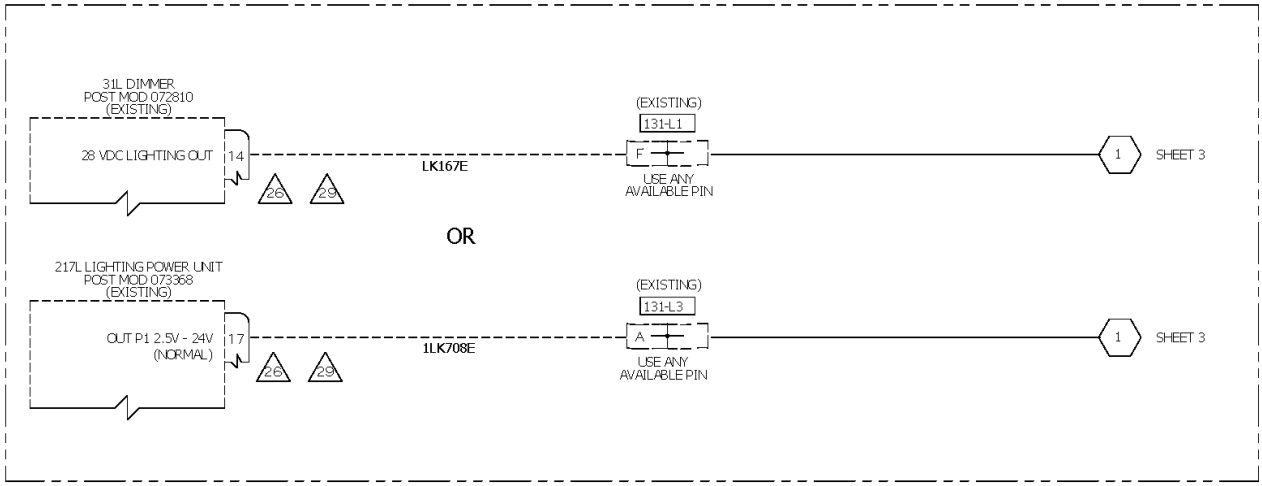


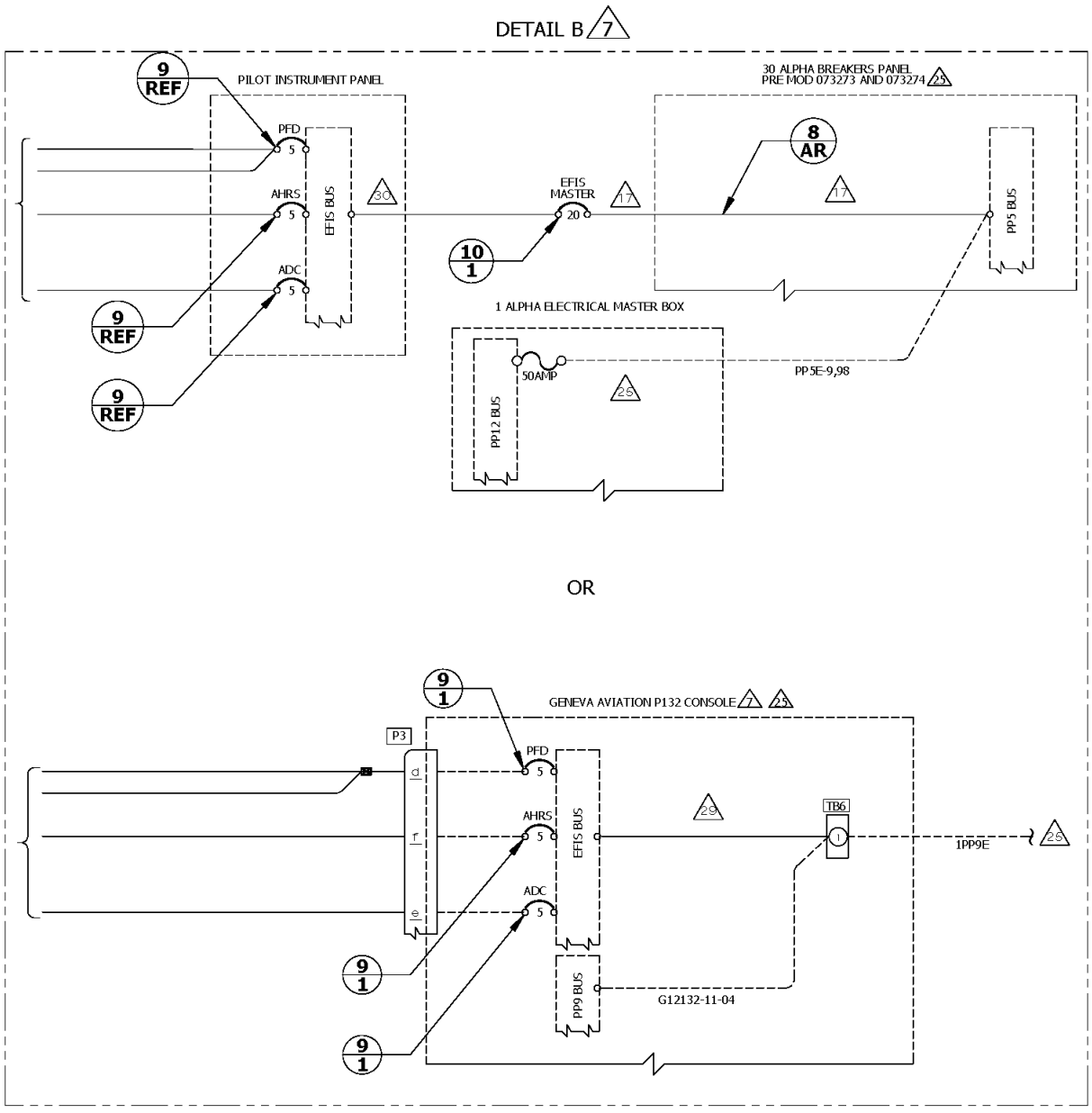
DETAIL A
M81714/60-22-05

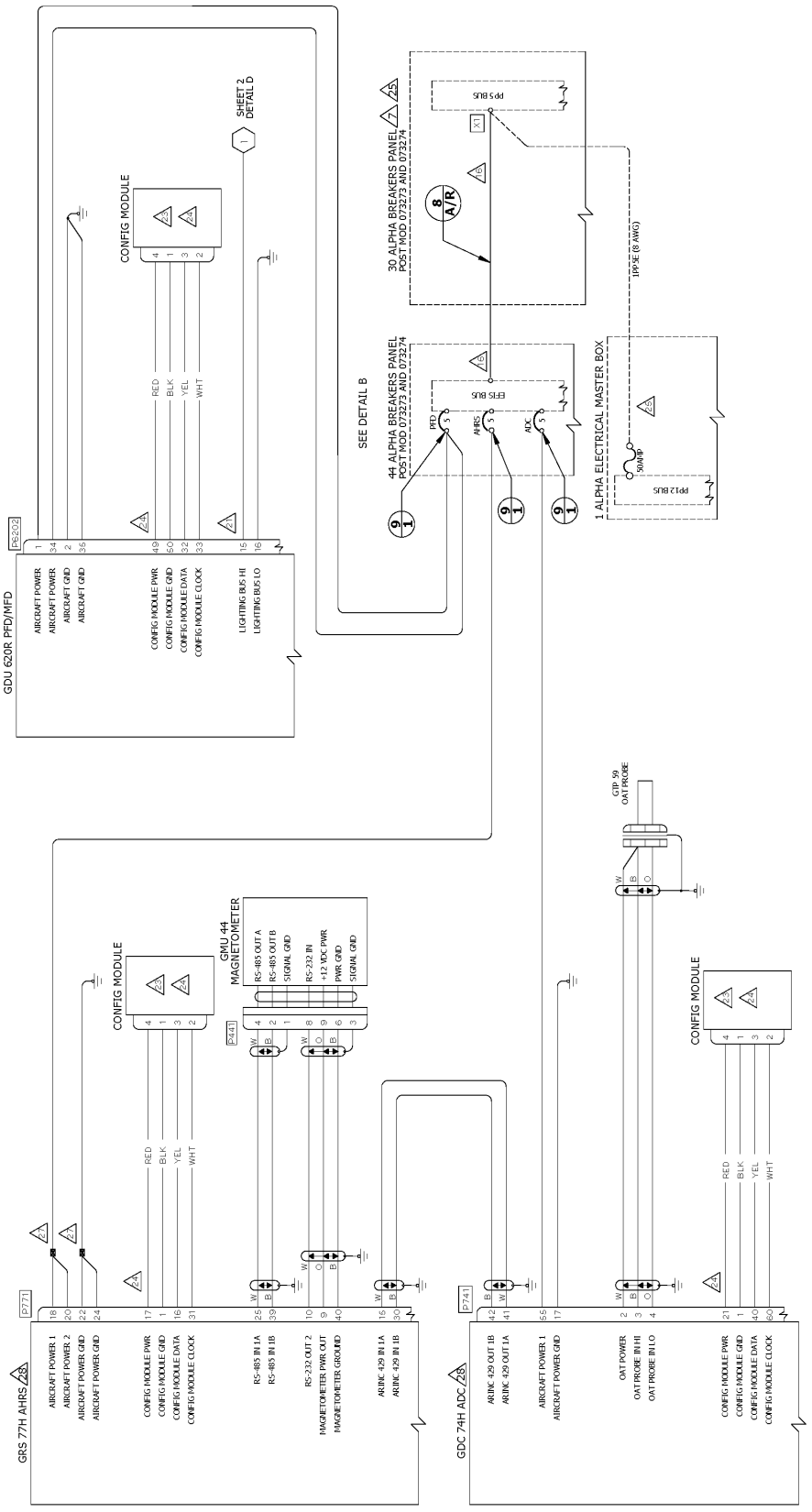


DETAIL C
M81714/60-22-01

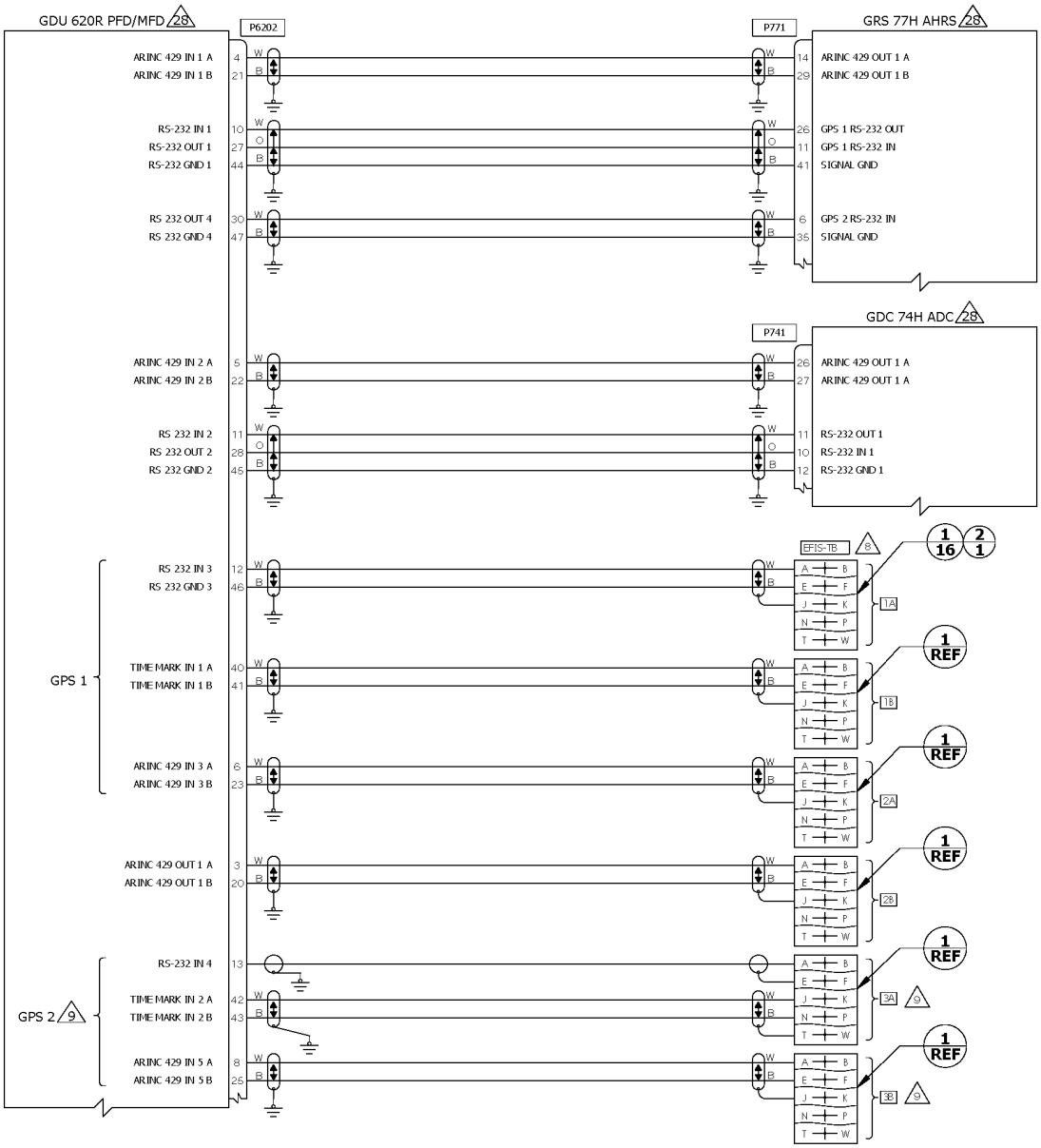
DETAIL D
INSTRUMENT DIMMING OPTIONS

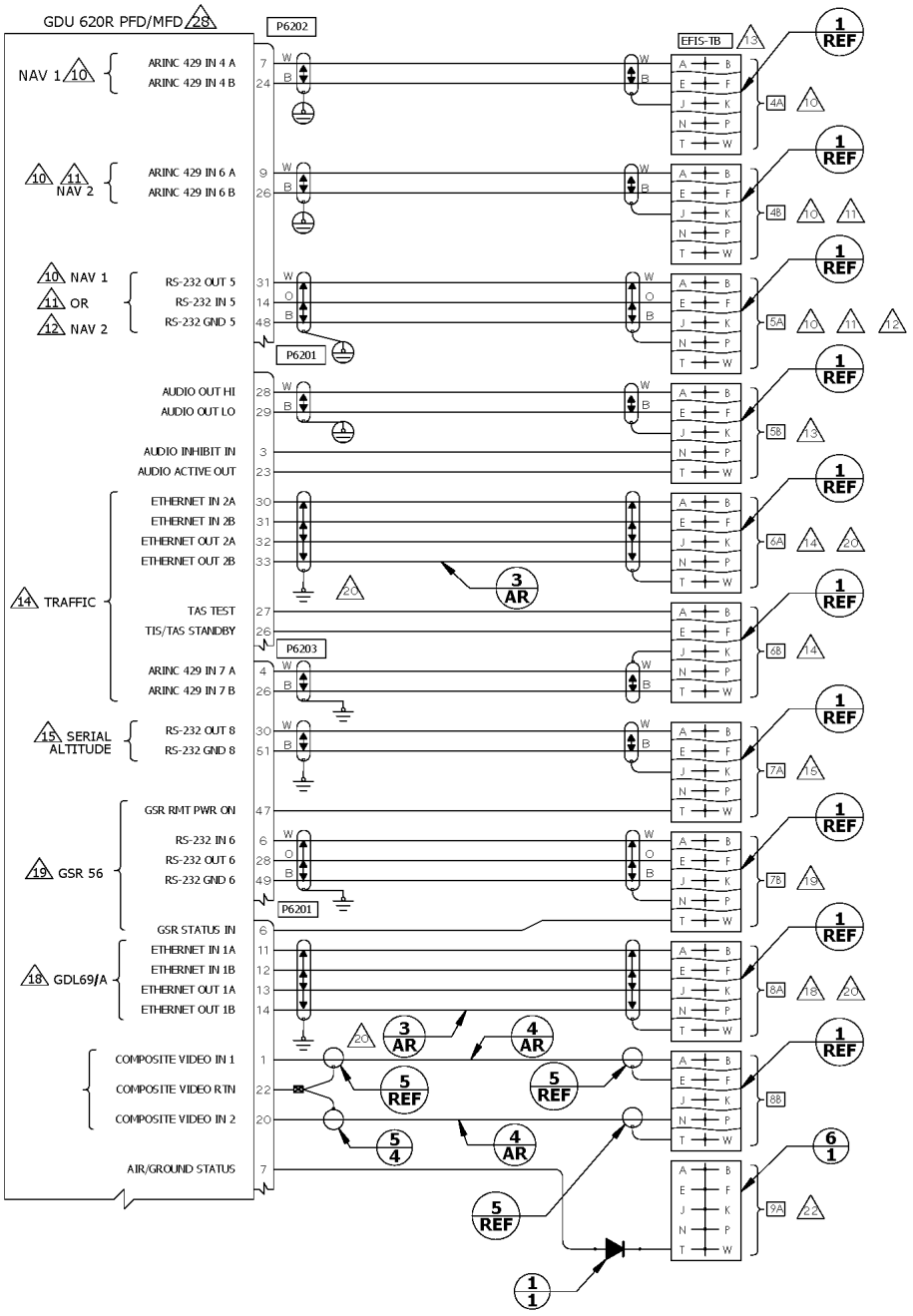



DETAIL B 7
9 REF
PILOT INSTRUMENT PANEL
PFD
AHRS
ADC
EFIS BUS
30
9 REF
9 REF
30 ALPHA BREAKERS PANEL
PRE MOD 073273 AND 073274 25
8 AR
17
EFIS MASTER
17
20
10 1
PP5 BUS
1 ALPHA ELECTRICAL MASTER BOX
50AMP
25
PP12 BUS
PP5E-9,98
OR
9 1
GENEVA AVIATION P132 CONSOLE 7 25
P3
PFD
AHRS
ADC
EFIS BUS
29
TB6
1PP9E
28
9 1
9 1
PP9 BUS
G12132-11-04

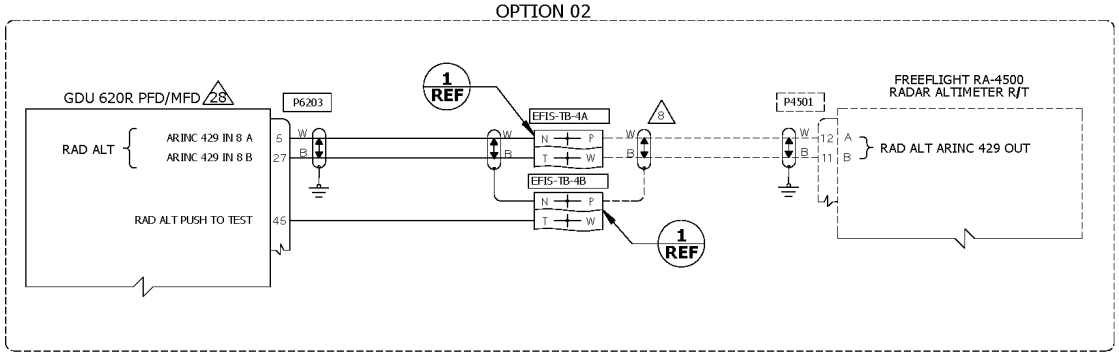

GDU 620R PFD/MFD
P5202
AIRCRAFT POWER
AIRCRAFT POWER
AIRCRAFT GND
AIRCRAFT GND
CONFIG MODULE PWR
CONFIG MODULE GND
CONFIG MODULE DATA
CONFIG MODULE CLOCK
LIGHTING BUS HI
LIGHTING BUS LO
CONFIG MODULE
RED
BLK
YEL
WHT
SHEET 2
DETAIL D
SEE DETAIL B
30 ALPHA BREAKERS PANEL
POST MOD 073273 AND 073274
44 ALPHA BREAKERS PANEL
POST MOD 073273 AND 073274
1 ALPHA ELECTRICAL MASTER BOX
PPS BUS
EFIS BUS
PFD
AHRS
ADC
SOLID
PPL2 BUS
10AWG
GTP 59
OAT PROBE
GMU 44
MAGNETOMETER
RS-485 OUT A
RS-485 OUT B
SIGNAL GND
RS-232 IN
+12 VDC PWR
PWR GND
SIGNAL GND
P441
P771
P741
GRS 77H AHRS
AIRCRAFT POWER 1
AIRCRAFT POWER 2
AIRCRAFT POWER GND
AIRCRAFT POWER GND
CONFIG MODULE PWR
CONFIG MODULE GND
CONFIG MODULE DATA
CONFIG MODULE CLOCK
RS-485 IN 1A
RS-485 IN 1B
RS-232 OUT 2
MAGNETOMETER PWR OUT
MAGNETOMETER GROUND
ARINC 429 IN 1A
ARINC 429 IN 1B
GDC 74H ADC
ARINC 429 OUT 1B
ARINC 429 OUT 1A
AIRCRAFT POWER 1
AIRCRAFT POWER GND
OAT POWER
OAT PROBE IN HI
OAT PROBE IN LO
CONFIG MODULE PWR
CONFIG MODULE GND
CONFIG MODULE DATA
CONFIG MODULE CLOCK

98-10-00

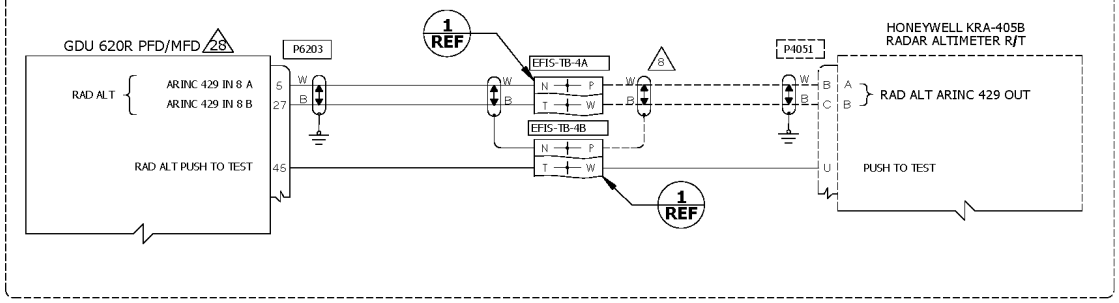

GDU 620R PFD/MFD 28
P6202
P771
GRS 77H AHRS 28
ARINC 429 IN 1 A
ARINC 429 IN 1 B
RS-232 IN 1
RS-232 OUT 1
RS-232 GND 1
RS 232 OUT 4
RS 232 GND 4
ARINC 429 OUT 1 A
ARINC 429 OUT 1 B
GPS 1 RS-232 OUT
GPS 1 RS-232 IN
SIGNAL GND
GPS 2 RS-232 IN
SIGNAL GND
GDC 74H ADC 28
P741
ARINC 429 IN 2 A
ARINC 429 IN 2 B
RS 232 IN 2
RS 232 OUT 2
RS 232 GND 2
ARINC 429 OUT 1 A
ARINC 429 OUT 1 A
RS-232 OUT 1
RS-232 IN 1
RS-232 GND 1
EFIS-TB 8
RS 232 IN 3
RS 232 GND 3
GPS 1
TIME MARK IN 1 A
TIME MARK IN 1 B
ARINC 429 IN 3 A
ARINC 429 IN 3 B
ARINC 429 OUT 1 A
ARINC 429 OUT 1 B
RS-232 IN 4
GPS 2 9
TIME MARK IN 2 A
TIME MARK IN 2 B
ARINC 429 IN 5 A
ARINC 429 IN 5 B
1A
1B
2A
2B
3A
3B
REF


GDU 620R PFD/MFD 28
P6202
EFIS-1B 13
NAV 1 10
ARINC 429 IN 4 A
ARINC 429 IN 4 B
10 11 NAV 2
ARINC 429 IN 6 A
ARINC 429 IN 6 B
10 NAV 1
11 OR
12 NAV 2
RS-232 OUT 5
RS-232 IN 5
RS-232 GND 5
P6201
AUDIO OUT HI
AUDIO OUT LO
AUDIO INHIBIT IN
AUDIO ACTIVE OUT
14 TRAFFIC
ETHERNET IN 2A
ETHERNET IN 2B
ETHERNET OUT 2A
ETHERNET OUT 2B
TAS TEST
TIS/TAS STANDBY
P6203
ARINC 429 IN 7 A
ARINC 429 IN 7 B
15 SERIAL ALTITUDE
RS-232 OUT 8
RS-232 GND 8
GSR RMT PWR ON
19 GSR 56
RS-232 IN 6
RS-232 OUT 6
RS-232 GND 6
GSR STATUS IN
18 GDL69/A
ETHERNET IN 1A
ETHERNET IN 1B
ETHERNET OUT 1A
ETHERNET OUT 1B
COMPOSITE VIDEO IN 1
COMPOSITE VIDEO RTN
COMPOSITE VIDEO IN 2
AIR/GROUND STATUS
1 REF
3 AR
4 AR
5 REF
5 4
6 1
1 1

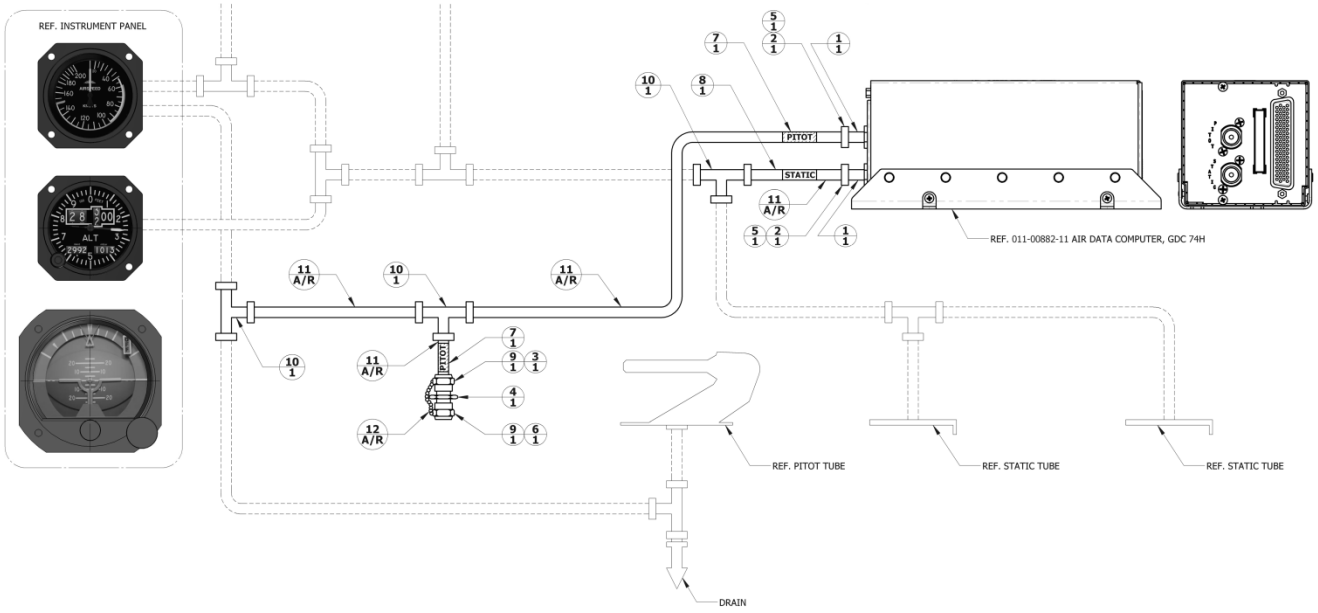
FREEFLIGHT RA-4500 INTERFACE
OPTION 02



HONEYWELL KRA-405B INTERFACE
OPTION 02



Section 98-20-00 Pitot-Static System Schematic



QTY.	ITEM NO.	PART NUMBER	DESCRIPTION	MANUFACTURER
A/R	12	EN3628-050	LOCKWIRE	EUROCOPTER
A/R	11	ASNA 4246-007X01	TUBE	EUROCOPTER
3	10	355A76607323	UNION, TEE	EUROCOPTER
2	9	33844	NUT	EUROCOPTER
1	8	23024-58	LABEL, STATIC	BELL HELICOPTER
2	7	23024-57	LABEL, PITOT	BELL HELICOPTER
1	6	21783	PLUG	EUROCOPTER
2	5	21559	UNION, DUCT	EUROCOPTER
1	4	20059 △2	UNION	EUROCOPTER
1	3	20001	UNION, DUCT	EUROCOPTER
2	2	120-3005-01	NUT	EUROCOPTER
2	1	H341-78-4D-39-2	FITTING, MALE CONNECTOR	EUROCOPTER

△2. ALTERNATIVE MANUFACTURER OF 20059 UNION IS -
RENAISSANCE MACHINE, LP
3600 NOBLE AVENUE
FORTH WORTH, TX 76111
PHONE NO. 817-759-2122